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Warnings in the International Event Flow: EFI and ROZ as Threat Indicators

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WARNINGS IN THE INTERNATIONAL EVENT FLOW: EFI AND ROZ AS
THREAT INDICATORS

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University of Southern California
July 15, 1976

Poor desperate descendant of protoman
tries to still his fears by classifying
them, by making an index of them.
Lawrence Durrell, MONSIEUR (1)

In 1971, a report was circulated on a procedure for monitoring the public reports of international relations. Entitled "The Management and Analysis of International Event Data: A Computerized System for Monitoring and Projecting Event Flows," this report was not thought of as an exact blueprint for creating an operational monitoring system.(2) Many such systems already were in existence and there was no known call for any new organization or activity. The only salesmanlike-urging in the report was an invitation: that government offices involved in forecasting work might find approaches or suggestions that could, with appropriate modifications, be incorporated in ongoing enterprises. At the same time, it was emphasized that "the processor," as described in the writing, actually worked. It was a real but latent operating system. The length of the report along with its fairly technical contents later on discouraged normal publication. This was the consequence of the concern to provide detailed information on each of the elements and the steps of the analytic procedure.

Only once--in April 1972--was the "computerized system for monitoring and projecting" subsequently exercised. Coming at the end of the World Event Interaction Survey (WEIS) funding cycle, the monitoring system lacked the means of putting it into regular action. Although only a few individuals outside governmental circles have had access to the report, the 1971 effort now appears to have served its intended purpose. Along with the "borrowings" of bits and pieces of the methodology, several offshoot enterprises have been launched in the intervening time. These usually have recast the monitoring concept for special purposes or have reformulated the idea of "event data files." The present writer has participated in several of these later efforts; others are known about less directly.

Now, exactly five years after the time of the writing of the 1971 report, the topic of early warning of

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International confrontations and crises again is considered. The problem is being approached in an entirely different way, however. This time, early warning is decoupled from forecasting. International event data analysis is conceptualized and executed from a standpoint foreign not only to previous WEIS reports but also to most other applications of event data. Very few statistical operations are employed. Ideas of threat and of threat consequences control the approach rather than the commonly used concepts of conflict or cooperation-conflict. Reliance is placed on the convergence of the values of two indices, one for "overall system performance" and the other for individual country behavior, in either safe zones of operation or danger zones. This time, the reporting also concentrates on the problem of coping with uncertainties brought about by the factor of rapid, multiple change.

THE QUESTION OF TRANSFORMATION IN THE INTERNATIONAL SYSTEM

In the relatively short time span of five years, so many changes have occurred in society, in government, in research, in personal and career perspectives, and in the prospects of the future that one of the new problems is to learn how to distinguish changes that are relatively trivial and inconsequential from changes that make a significant difference. It has become fairly obvious that the structure of the international system is different from what it was only a half decade ago. Foreign policy does not quite work the same as it did a few years back. The "games nations play" appear to have changed. International status orderings have altered: some nations have been promoted and some have been demoted. Different content and different emphases appear on the "agendas" of international relations. For example, widespread acknowledgement is being given that issues of "political economy" now are in the ascendant.

Maxwell Taylor recently expressed an insight gained also by a number of concerned observers when he warned that new threats are arising in the international environment and that national defense needs a more comprehensive definition than in the past.(3) Seyom Brown has set forth a long bill of particulars to support and illustrate his contention that new forces are on the move in the public affairs of the nations.(4) James Rosenau is calling attention repeatedly to transnationalism as a movement that extends far and penetrates deeply. It is Rosenau's view that the transnational force even changes the basis of national power.(5)

It is no longer very startling or disturbing to be told that one historical era, dating back to the conclusion of World War II, has been brought to an end and that a new age has begun. Repetition of the notion of old times concluding and new times commencing creates semantic familiarity and, presumably, eases the adjustment we must make to new realities. That the international system has just passed through a great transformation, affecting both the structure and the process of the system (or, that it is just now experiencing such a transformation) is all but a commonplace observation. Perhaps it is the approach to total consensus that is disquieting; that is worrying enough to give rise to a skeptical reaction. What if things have not changed and affairs have not been redirected in as fundamental way as is so widely thought? What measurement, what analysis, what proof do we have that this is a new era of world affairs? What if detente, and the new influence of multinational corporations, and the eclipse of the cold war, and the assertive third world campaigns against dependency and for equality, and the power of the oil producers, and the dynamics of the tripolar balance of the United States, the Soviet Union, and China, and the stresses threatening the viability of the international economic order, and the decline in the legitimacy of states, and the condition of non-governability of modernized societies are but temporary manifestations? What if all these things are only passing counter-movements against forces and conditions that shortly will reassert themselves?

There are two ways of getting into serious trouble with the factor of change. One is to make too much of it and to overreact to it. The other is to fail to comprehend its implications, consequences, and extensions. The first type of error tends to compound adjustment difficulties and to stimulate programs of innovation that are not really needed. The second type of error results in the mystification of discovering that old and tested processes or solutions are producing strange outcomes and, sometimes, even opposite of intended effects.

An unusual amount of uncertainty exists in current world affairs. This condition makes the burden of accurate appraising of international situations heavier and the task of planning the directions of foreign policy more demanding than ordinarily. More exact judgments of the actual states of affairs and better measurements of world conditions are needed for coping with the factor of change and for averting serious mistakes of perception and policy estimation under current conditions of high uncertainty.

What Davis Bobrow has characterized as the "engineering framework" of international relations analysis is in need of comprehensive development. One of the functions of the engineering framework is "to monitor the state of some part of the real world in a way which signals when some intervention or change is needed in order to achieve a given goal."(6) If the relations of the nations have shifted lately in some marked and significant degree, it becomes an urgent practical project to monitor the reports of activities that must be reflecting the changed relations and to measure in this evidence both the direction and the force of change. If there are, in fact, new behaviors, new patterns, and new forces emerging in world affairs, we need to be examining them in several perspectives and to be identifying their characteristics as completely as we can. Some of the conspicuous changes may turn out to be superficial or transitory while others may be found to be fundamental and permanent. We need to know which are which. It even could develop that quasi-experiments will have to be institutionalized: we may not, in some matters, be able to decide where affairs are going and, thus, be compelled to put assessments and plans on a dual track. One orientation would begin with the assumption that times had changed and the other with the assumption that they had not.

Such interests and concerns as those stated immediately above are the stimuli for turning again to the monitoring of international event flows. The techniques and data of the 1971 report, updated and modified, are a means for bringing measurement to bear and for doing tests on the transformation of the international system.

The theory of how international system transformations generally take place is not a new subject. Seventeen years ago, Kenneth Boulding noted that every so often some event triggers the "reorganization" of national images. The effects of such "reorganizations" spread into international behavior and introduce "a marked element of uncertainty into any dynamic international system which does not exist, for instance in the solar system."(7) Boulding then observed:

In spite of this difficulty, which, oddly enough, is particularly acute in short-term prediction, one gets the impression from the observation of history that we are in the presence of a true system with a real dynamic of its own. We do observe, for instance, cumulative processes of hostility. If we had some measures of the hostility matrix, however crude, it would be possible to identify these processes in more

detail, especially the "turning points." There is an analogy here with the business cycle, which also represents a system of cumulative stochastic processes subject to occasional "reorganizations" of its basic equations. Just as we can trace cumulative upward and downward movements in national income, the downward movements often (though not always) culminating in financial crisis and the upward movements often leading to inflation and a subsequent downturn, so we can trace cumulative movements in the hostility matrix....It might be called the "international temperature." Just as there is a certain critical point in a deflation at which a financial crisis is likely to ensue because of the growing insolvency of heavily indebted businesses, so there is a critical point in the rise of hostility at which war breaks out.(8)

Although research following Boulding's clue about the clear tracings of hostility has not enjoyed any spectacular success, the insights about the quite sudden shifts in shared perceptions and the subsequent redirection in the performance of the system have stood the test of time very well. Another very useful concept, provided years ago by Boulding, is that the international system is, primarily, a threat system.(9) The data of international system behavior are diverse and multidimensional, involving many different "observables" of exchanges, transactions, responses, and relations between national societies, including their politics and their economies. Choices of different indicators of international behavior abound. One will not go far wrong, however, in selecting the psycho-political accompaniments of threat when the purpose is to mark out the main line of activity in international politics. Stress, tension, and the preoccupation with foreseen dangers are attributes of interaction of particular monitoring importance for world affairs.

Many investigators have gone in the first direction pointed out by Boulding. Watch the expressions of hostility in the relations of nations and, by observing how the nations take up positions along a scale between friendship and hostility, he advises, you will have a method of tracing the dynamics in international system activity. Scaling the evidence of international activity along a cooperation-conflict continuum has become a favorite analytic pursuit.(10) Very few have followed the other advice to view affairs in the perspective of threat and its behavioral accompaniments. The two approaches prove not to

arrive, necessarily, at the same destinations. Threats, involving, in one of the two main perspectives on the phenomenon, perceptions and anticipations of oncoming danger and, also, reactions of concern and uncertainty about a future that is endangered, are capable of stimulating copious amounts of cooperative behavior. The tension and stress associated with threat perception can induce hostile and even violent reactions but this is not always the case. Changing levels of threat are not coupled with particular shifting ratios of cooperation and conflict in most instances. In fact, such coupling appears to us to have been rare in recent international relations. We contend below that warning signs in the international event flow are linked to threat effects rather than conflict effects.

To provide measurements and to make tests of change, we can begin with the reasoning that if the international system is a threat system, a transformation would involve significant shifts in the amount of threat being manifested, in the kinds of threats arising, or in the patterning being taken by threat. Alternatively, we might focus on the effects produced by threats--stress and tension--and seek measurements and evidence at one remove. Whatever the choices, the first requirement is to demonstrate our capability to analyze and account for the conditions that existed before the alleged transformation took place. Unless selected indicators trace out convincingly the performance variations in the old regime, confidence will be slight in our ability to characterize the new regime. Indeed, to demonstrate that analytical techniques that worked accurately before no longer perform as well is, in itself, an important test of change.

AN INDEX THAT REFLECTS INTERNATIONAL STRESS AND TENSION

International event data collections can be prepared in several different ways. The simplest approach is to assemble in chronological order the reports of what has been said and done by parties engaged in international relations. Rules of procedure in establishing who the parties are, what international relations are to include, and what falls within the confines of "things said and done," are needed to maintain a steady focus for data acquisition. With just a few arrangements to order item selection and to maintain consistency of choice, the preparation of international event data files can be kept very simple and straightforward. Of course, more elaborate data acquisition operations can be pursued. Including more items of information contained in reports of events and scaling each

reported event according to some attribute are the usual elaborations found in the more complicated collections.

The data collection used in this report is the "WEIS file," now grown to a ten year time series data set including 78,956 records of reported events and spanning the time period from January 1, 1966 through December 31, 1975. This file has the simplest possible organization and follows the plan described above; it is just a computerized chronology. Its data have come entirely from the news stories contained in the daily NEW YORK TIMES newspaper. The rule has been to search out all reports contained in the news pages of all events by all governments as the latter have engaged in international relations. The day is the basic time unit of observation. In transcribing each report of an event, data gatherers have been trained to search out the relevant subject, verb, and object. No scaling has been done and therefore no judgments have been incorporated about the relative positions, strengths, or relationships of events.

It can be argued also that no categorizing has been added. Only standardized identifications are provided, from item to item and from day to day, to cover which party initiated the action indicated in the event report (the subject), what the character of the event action was as indicated in the newspaper story (the verb), and which party was on the receiving end of the action (the object).

The recording practice has been to provide first an English language sentence or short paragraph that somewhere identifies the initiator of the action, the action, and the target of the action. Second, a numerical coded version has been included, equivalent in the essentials to the English sentence or paragraph. Thus a newspaper report that included the sentence, "Secretary of State Kissinger today accused the Soviet Union of interfering in Angolan affairs," probably would appear in the transcribed WEIS description as "USA accuses USSR of interfering in ANG affairs." The coded entry would be 002 121 365 where 002=the United States, 121=accuses, and 365=the Soviet Union. Thus, three symbol sets carry the same basic information. Hence, we argue that WEIS procedures have standardized symbols more than provided categorization. The newspaper is the source of the set of categories.

It is certain that the numerical coding has provided no more than a convenience and a device for imposing consistency and discipline on the identifications of actor, event, and target. Given consistent entering of the WEIS

descriptive sentences and paragraphs and appropriate computer scanning programming, the numerical codings could be dispensed with entirely. Indeed, optical scanning of the original newspaper text always has provided the possibility of eliminating all the transcribing to machine readable forms. Further, the NEW YORK TIMES now has a data selection and retrieval service based on its own machine readable digests but, interestingly, blocks access and further processing of the data, presumably for commercial/financial reasons.

These observations about event data collections in general have been set forth first for the purpose of calling attention to the frequent misrepresentations that have appeared in the literature in characterizing the basic WEIS data set and second as a necessary foundation in explaining the approach to the invention of a series of international tension indicators called Event Flow Indicators or EFI's.

It has been said repeatedly that the WEIS material "serves essentially as CONFLICT-INDICATOR data..."(11) There is no objection to this observation when it is understood (1) that studies based on the collection can be directed by conflict concepts and that conflict phenomena may be highlighted or emphasized by selections made from the body of data, or (2) that in the historical period covered by the data set the news sources either were governed by preoccupations with manifestations of conflict and international violence or that the actions of governments in that period were directed mostly toward conflict and violence. What we wish to warn against is the assumption that the International event flows monitored in the collection were favored or determined by selections of their content according to conflict attributes.

A second misconception, only partly corrected after 1970 when the distinction was pointed out between the "scaling" and the "categorizing" approaches (12), is that the WEIS data are "only" nominal in character and, therefore, can be manipulated only through a few very restricted statistical operations. It is another point that event data seldom warrant very much statistical processing, since most inferential statistical analyses plainly do not apply(13). Thomas Sloan, for example, slips into the old error in remarking, "Although McClelland's scheme uses generally nominal scaling, it has, nonetheless, served as a source for some of the recent ordinal scaling efforts."(14) It is to be emphasized that the WEIS data are "scaling-free." That scaling can be imposed by way of weighting event types and rearranging their ordering in

cross-comparisons is possible as Corson(15) and Calhoun(16) have demonstrated. I have always protested in these and other instances that such scaling has a faintly ridiculous aspect since it proposes propositions of the kind that say that it would take 2.7 protests to equal the conflict intensity of one warning, and so forth.

The misinterpretations probably do very little damage; it probably does not matter that many students think the WEIS data are nominal scaling materials. To say that the classes of events or the category types are nominal is true but silly: categories are assigned names or ID's of some kind and hence, they are named or nominal. These impressions tend, however, to obscure the understanding of the conception of event data that is followed in building the EFI's. This is the general idea that the daily reporting of event occurrences results in a flow--the "flow of the news." Selecting the strictly international and governmental portions of this news traffic by applying explicit rules for data item definition actually enhances the flow phenomena. Accounting for the flow proceeds in two main directions: the proportioning of the substreams made up of the several types of events occurring and the proportioning of the actor (or target) substreams. When the element of varying observation periods is added to these two options for analyzing the event flow, literally hundreds of combinations of observation time spans, events proportions, and actor-target proportions become available for study.

The fundamental concept is that of movement in the size, composition, and direction of one or several vectors, all shifting about with the passage of time. The "state of the system" at a given time and interval is the composite of the readings of several elements of the vector(s). In the same general way, the condition of the weather is understood through the readings of several vector elements including temperature, humidity, barometric pressure, and wind velocity. Similarly, the readings for several vector elements--the 22 general types of events, for example--may be interpreted as a composite referencing of the state of affairs in the international system. Boulding thought of a hostility reading that might be used to indicate something like the international temperature. A single composite descriptor or several vector elements whose values are presented as a set might be an improvement on Boulding's original idea.

Most studies using event data collections have employed fairly long observation periods: "It is clear that the large majority of studies have focused on time aggregations of a

year or more."(17) Investigators have expected to get good results by disaggregating the data to the level of selected actor-target pairs: "We posit, however, that events research lends itself to making very rich dyadic profiles."(18) Dozens of WEIS studies, done in earlier years, used long time periods of a month or more as observation units and turned to various selections among the 25,000 odd pairs of relations of actor and target. Unimpressive and inconclusive findings resulted commonly; the effort to place the studies for publication usually seemed unwarranted. Most of the things being recommended for improving the event approach were given a trial in earlier years: source bias analysis, utilization of multiple sources, including supplemental data, doing research on subsystems, etc.(19) Much better success has come lately by moving in opposite directions and by following reversed versions of the advice. The first Event Flow Indicator was devised in 1974 for use with THE TIMES of London event data set. This "World News Index" was calculated every month for the period of a year. It was presented, initially, in a less than serious mood. It performed so successfully, however, that it was worked on some more, revised to fit the NEW YORK TIMES data collection, and improved to its current version, which is designated as EFI-3.

THE CALCULATIONS FOR EFI-3

The first step in preparing EFI-3 values is to construct a table of data from the WEIS chronology so that the numbers of occurrences of events for each week since January 1966 appear on the rows. Thus, there are 522 weekly observations or "cases" on the table. On the columns are the "variables," or, as we have just sought to show above, the elements of the vector of the event flow. They are the 22 event categories. The 22 types have long since been given these names: yield, comment, consult, approve, promise, grant, reward, agree, request, propose, reject, accuse, protest, deny, demand, warn, threaten, demonstrate, reduce relationship, expel, seize, and force. Various schemes have been tried combining the event types in groups or eliminating some of them. No arrangement works better for the NEW YORK TIMES FILE analyzed in weekly units than the elimination of all data for the categories except for comment, reward, reject, accuse, expel, and force. This strange and interesting deletion results in the use of 31,812 event records out of the total 78,956 in all calculations of EFI-3. It is to be noted also that all the battle reports coded after 1969 for the Vietnam and Cambodia encounters were deleted because they proved to have an

overpowering effect on the indicator in 1971 and 1972. (Battle reports were coded 027 and 210, a provision making for accurate eliminations of items; such items were not gathered in the 1966-1969 period).

Throwing away so much hard-won data was a difficult choice and it might not even have been tried if the EFI computer program had not been so convenient and inexpensive to use. The choice of the particular six categories came from the study of the rotated factor matrix of a factor analysis using the 22 categories as variables and the 522 weekly observations as cases. The six categories were taken, one each, from each of the six dimensions identified in the data.

The next step in calculating values for EFI-3 is to construct a new table still containing the 522 weekly observations but including only the numbers of occurrences in the columns for the six selected event types. This new table serves as input to the computer program that calculates the actual EFI-3 values. It contains data reflecting a flow across time, week by week, of six varying substreams of international action. A proportional analysis of the amount of flow in the six substreams is the basis of the EFI-3 calculations. The "variety measure" is one of the available ways for arriving at a single number representation of the status of a multi-stream flow. The algorithm is famous and long-established and is identified variously as a theory or a measure and as referring to information, uncertainty, or variety. One chooses a preferred naming: information theory, or uncertainty measure, or variety measure, or some other combination. Variety measure is a good and modest choice.

"Settled down" systems whose performance traits are steady and well-understood often can be made highly predictable through the use of the variety measure. The international system seems to be disturbed endlessly, seldom holding to a stable, "settled down" state. Thus, the variety measure is not as potent a measuring tool to use on international relations as one might hope. The possibility exists that the problem is only that we have not yet learned to recognize steady state conditions and ranges in international affairs. In any case, the variety measure appears to be more useful at present as a monitor than as a predictor. It is an old finding (20) that as the international system suffers stress and the onset of political crisis or warfare, the values of the variety measure tend to increase.

When the variety measure yields a series of lower numbers, that indicates an increasingly uneven distribution of the flow of events across the available channels. Some substreams are flowing heavily and some lightly. A trend toward higher numbers indicates a tendency toward equal flow proportionality in the substreams. "Relative uncertainty" or HRel is the ratio between an observed condition of proportional distribution in substreams and the "yardstick" condition of exactly equal portions feeding into each substream. We should emphasize the point that the quite consistent finding is that when international tensions are growing toward the showdown condition of crisis or violence, the flows of reported international events move toward the equal distribution status. Above a minimal volume of event flow, the numbers of events occurring per observation period do not necessarily lead to higher variety measure values. Indeed, the ordinary insight is that, as parties move into the more extreme phases of confrontation, conflict, and crisis, they should be found concentrating their actions into narrower than usual ranges of behavior.

The main discovery behind the EFI's is that both volume of action and variety, as defined above in terms of proportional substream flows, increase. Volume, which is the count of numbers of occurrences of reported events per observation period, generally moves up faster than variety, however. The extent to which volume closes the gap on variety is what EFI-3 measures, using the NEW YORK TIMES data file and week units of observation. (EFI-1 employs month time units of observation, EFI-2 uses 15-day spans, and EFI-4 organizes by 3-day units. Calculations for all have been carried out.) The computer program which does the calculations of the changing width of the gap between volume and variety is quite simple and short. It is available on request and should be examined by anyone interested in the exact and complete procedure. Some constants have been introduced to adjust the gap values to index-type readings and to cause a 500 reading to reflect a "warning condition."

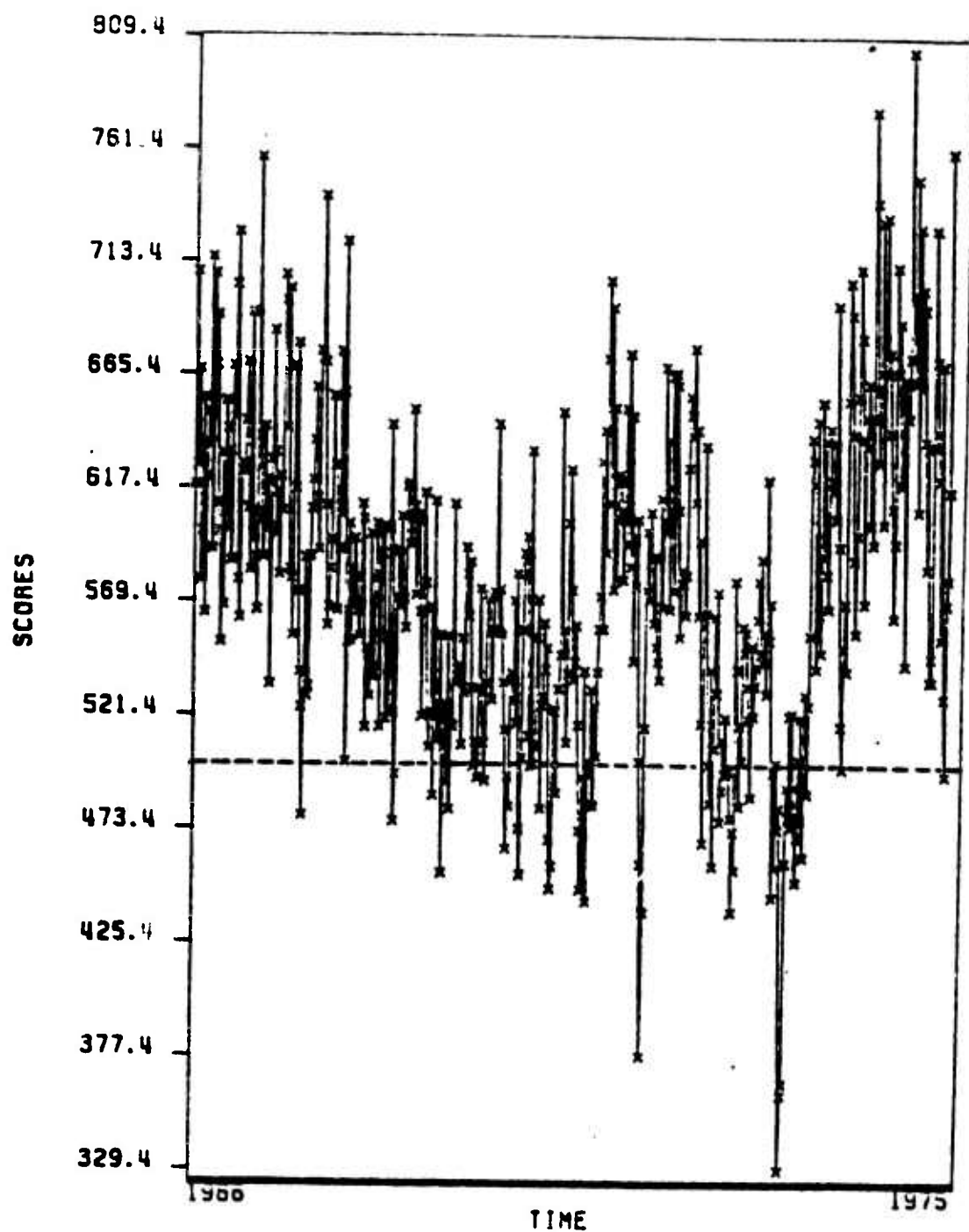
The reader should take note of a possible source of confusion in the next explanation. Above it was said, correctly, that as international tension increases, HRel values increase. It is now to be stated that as international tension increases, EFI-3 values go down. Further, it has been noted that EFI-3 calculations derive from HRel values. The added factor is volume. It is the distance between the volume and variety lines that EFI-3 measures. Hence, as distance decreases, the index numbers become smaller indicating higher tension and greater propensity toward crisis and/or violence. The system is

"redlined" at 500 for an easy-to-remember level, marking out immediate danger. EFI-3 thus monitors the "whole system" and, in the fluctuations of its weekly index values, it registers the rise and fall of threat conditions in the international political order. The degree of confidence one puts in the EFI-3 values comes in part from examining how well its index numbers fit the international history of the past decade.

There are, of course, 522 EFI-3 readings--one for each week from January 1966 through December 1975. These numbers as well as the readings for the first six months of 1976 can be found in the table in Appendix I. Figure 1, shown below, contains the same information as a "fever chart" for the entire ten year history, with the 500 level "redline" drawn in to facilitate the identification of crisis periods. Again, it is to be noted that on an EFI chart, down trends signify trouble.

A quick scanning of the EFI-3 number sequences produces some immediate results. We want to watch for values that reach down toward the 500 warning line and that dip below into the 400's or 300's. We can note when the lows occur and then match dates with what we know happened in the decade of 1966-75 in international relations.

The first crisis-level low on the chart is 478.8: we see it is the reading for the week ending June 10, 1967. The identification problem is solved immediately: this was the time of the Six Day War or the June War in the Middle East. The next interesting readings occur for the weeks ending August 24 and August 31, 1968. These were, of course, the time of the Soviet intervention in Czechoslovakia. The next low of 407.4 occurs for the week ending March 1, 1969 but the matchup with a major historical episode fails by a week. The Sino-Soviet border clash took place a few days after March 1. It remains unexplained at this point what drove the index down during the week ending March 1, 1969. Indeed, the next dozen low readings do not seem to fit well with any well-remembered dates. April 1970 reminds of the Cambodia incursion and two crisis-level readings are found here at the appropriate location. Similar recognition occurs for September 1970 with its cluster of 400 level values for the dates when the armed clashes between forces of the Palestine Liberation Organization and Jordan were at their height. An excellent matching is made with the 458.7, the 377.3, and the 438.4 figures for the first weeks of December 1971. This was the time of the stress and tension spread by the India-Pakistan war.



TEN YEARS OF EFI SCORES BY WEEK

FIG. 1

We again have some difficulty with the next flurry of low readings but the sequence following beyond that is quite dramatic. The numbers starting for the first week of September 1973 and then continuing for some time tempt this interpretation: if EFI-3 had been operating in 1973 and if heed had been given to its warning signs of high international tension, governments would have been on the alert everywhere for signs of developing trouble and the October War might not have come with as much surprise as it did. We shall want to return later to a more detailed analysis of this proposition. The next occurrence of a low index number when the October War aftershocks had passed is a qualifying 499.0 for the week ending July 27, 1974. It connects easily with the Cyprus crisis and war.

The 496.4 of December 1975 seems to have a vague connection: perhaps it was the Angolan civil war or the strife in Lebanon or both that pushed the index below the 500 mark. It is this kind of situation that begins to make the matching of numbers and remembered events annoying and unsatisfactory. In fact, EFI-3 appears to fall quite short as a tension monitor. It scores hits at times of the big episodes but has apparent misses several times when low numbers are encountered but no dramatic or important events are remembered to have dominated international relations. Further, EFI-3 tells us nothing about who confronted whom or about the quarter from which international tensions arose. The best explanation we have to offer of what EFI-3 really does is to note that, from time to time and in no regular rhythm or cycle, the normal flow of action in the international system becomes distorted due to an unusual series of occurrences. The resulting deflections register in the composite reading of volume interacting with variety and thus appear as EFI numbers in the danger range of 500 and below. A different kind of indicator will have to be provided if we are to move around the blindspots. To make sure about the cause of the deflections and downward movements of EFI-3 we obviously must turn to individual performance records of various members of the international system. An indicator called ROZ has been constructed to meet this need and to provide additional tests for locating warning signs in the flow of events. When ROZ has been identified and the calculation procedure explained, we shall go back to the ten year history and make a stronger analysis of the appearances of severe international tension.

CALCULATING THE ROZ VALUES

The name, ROZ, developed from frequent references to "row percentages and column z-scores," and from a need to find a contracted expression covering these words. The guiding concept is simple and quite easy to describe. During an observation period--in the present study, always the week beginning Sunday--it is apparent that the total event flow reported for the "whole system" is proportioned among the initiators of the events. That is to say, it can be determined from the computerized chronology what portion of the whole activity has been generated by an actor in the system. There are 183 actors on the roster of the WEIS collection--including a few deceased such as Bialfra--and one aspect of the system's performance is participation indicated by the percentage of the action attributable to each party. Richard Beal has prepared a world map that shows this performance trait by adjusting the areas of the countries to fit the percentage of the activity contributed by each for the ten year period of 1966 through 1975. It appears here as Figure 2. The overall statistics for the decade are interesting. Attention is called to Appendix II where some of the data are summarized.



Calculations have been made and tables prepared showing the weekly "take" of each of the 183 actors in terms of the percentages of the action initiated. Parallel data for month, 15 day, and 3 day observation periods also exist. To illustrate, we draw out the data of row percent figures for

the week ending September 13, 1968. It is shown that the United States initiated 16.7% of the total action (126 events) reported for the week. The United Kingdom initiated 4.8%, France 4%, Poland 3.2%, Czechoslovakia 4%, Italy 2.4%, Rumania 3.2%, the Soviet Union 15.9%, the United Arab Republic 3.2%, Lebanon 3.2%, Israel 6.3%, North Korea 4%, and North Vietnam 2.4%. The United States was a little "below par" that week (the U.S. 10 year average being 19.2%). So, too, were the United Arab Republic (3.8% 10 year average) and North Vietnam (6.7%). A little "above par" were the United Kingdom (2.5%), France (2.1%), and Israel (5.7%). Markedly active and hence suspected of being under unusual stress were the Soviet Union (whose 10 year average was 6.9%), Poland (.5%), Czechoslovakia (.6%), Italy (.5%), Rumania (.5%), Lebanon (.7%), and North Korea (.5%). Thus, the weekly row percentage figures open a window on what was going on at the time and which of the actors were particularly involved and active. The main interpretation based on the comparisons set forth above is quite easy to make: the aftershocks of the Soviet intervention in Czechoslovakia were still quite strong during the week ending September 13, 1968.

The row percentage data can be turned in several directions to indicate where the action and, possibly, the stress in the international system is centered. If an index is to be developed relating comparably to all countries, however, an arrangement needs to be found to correct for the problem illustrated in the following example. The event flow portion of North Korea at 4% of the whole was quite unusual since the North Korean average over the ten years was but .5%. Border clashes and some activity relating to the aftermath of the PUEBLO affair account for this. On the other hand, the 6.3% "take" of the action by Israel was fairly close to Israel's usual performance and only a little above the average of 5.7%. How can the calculations be adjusted to take into account that North Korea's 4% was both a substantial part of the whole and quite unusual and that Israel's 6% was both substantial and quite usual? Of several possible answers to this question, the one used in building ROZ was to modify the row percentage for each country by multiplying it by the z-score of that country and then adding the constant of 30.

Z-scores are measurements in standard deviation units of distances above and below means. By taking the 522 weekly observations for any of the 183 actors that are interesting to us, we can calculate readily the status of each weekly performance expressed in z-score terms. The U.S.A. z-score for the week ending September 13, 1968 is read off the table

to have been a quarter of one standard deviation (-.27) below the United States average event initiation over the 522 week period. Israel's event initiation was close to its average (-.06). In sharp contrast, North Korea's row percent score of 4% of the action was very unusual for that country and exceeded its 10 year average by 2.75 standard deviations. The ROZ value for North Korea results when the 4% is multiplied by 2.75 and increased by 30 and is shown on the ROZ table, as assembled by the computer, as 41.66. Israel's 6.3% multiplied by -.06 and increased by 30 produces a ROZ of 29.62. The ROZ for the United States is 21.00. We now have what we need: an indicator for single country performance that takes into account the country's weekly portion of the total action and the extent to which that portion is exceptional in comparison to the ten year average. Row percent interacting with Column Z produces an index number to go with EFI.

NINE HIGH TENSION EPISODES IDENTIFIED AND DEFINED BY EFI AND ROZ

As noted previously, EFI readings are redlined at the 500 warning level. Experimentation with the ROZ tables shows that for all countries except the United States, ROZ readings should be redlined at the 50 level. Because the United States participates much more in world affairs than any other nation and also because the NEW YORK TIMES, being an American newspaper, includes an extra measure of reporting on U.S. actions, the redline for the United States has to be raised to 70. With danger zones established for both indicators, we can take advantage of the "whole system" scanning to locate the times of maximum international tension by following the clues given by the lows of EFI-3 and then, by tracking back in time a short way, take note of 50 or larger ROZ readings. When these occur in a series before the EFI low, we shall interpret them as warning signs of approaching international danger, threat, and tension. When they continue after the EFI low is reached and clearly belong together as a series, the high ROZ readings will be interpreted as aftershock phenomena. How this system of dual indication works is illustrated first with the data of the June War of 1967.

1. AN ANALYSIS OF THE JUNE WAR

The earliest EFI value in the danger zone identifies the June War of 1967. The week ending June 10 had a 478 reading. The ROZ values for Israel, the United Arab

Republic, Syria, and Jordan for that week, as shown in Table 1, give confirmation, if that were needed, that this was an intense crisis period. All the ROZ numbers above the danger level are underlined on the table. Ten weekly observations before the crisis period are displayed on the table. This is an arbitrary choice. Five weekly observations after the crisis week also are shown unless the ROZ and EFI data indicate unambiguously that there is an aftermath of the crisis episode extending across a longer period.

① JUNE WAR

(April 1, 1967 - July 15, 1967)

New York Times File

| WEEK END | EFI-3 | #OCC | ROZ USA | ROZ USR | ROZ ISR | ROZ UAR | ROZ SYR | ROZ JOR |
|-------------|------------|------|------------|------------|--------------|--------------|--------------|--------------|
| 4/1 | 701 | 75 | 14.43 | 25.04 | 30.00 | 30.00 | 30.00 | 29.55 |
| 4/8 | 583 | 149 | 59.27 | 27.74 | 28.91 | 29.24 | 30.01 | 29.77 |
| 4/15 | 578 | 111 | 25.86 | 26.63 | 28.29 | 30.00 | 30.81 | 30.00 |
| 4/22 | 554 | 145 | 35.20 | 27.41 | 29.03 | 29.50 | 30.01 | 30.00 |
| 4/29 | 668 | 110 | 39.00 | 30.80 | 29.26 | 28.85 | 30.02 | 30.00 |
| 5/6 | 616 | 72 | 13.34 | 24.79 | 28.87 | 28.99 | 31.25 | 20.00 |
| 5/13 | 678 | 53 | 6.45 | 23.28 | 28.47 | 28.62 | 31.70 | 30.00 |
| 5/20 | 573 | 127 | 21.30 | 27.86 | 28.46 | 35.04 | 33.47 | 29.94 |
| 5/27 | 539 | 186 | 36.83 | 31.35 | 38.32 | <u>59.10</u> | 30.48 | 39.83 |
| 6/3 | 524 | 267 | 30.42 | 40.17 | 39.88 | <u>99.21</u> | 35.51 | 39.93 |
| ○ 6/10 | <u>478</u> | 197 | 31.01 | 41.49 | <u>53.78</u> | <u>68.34</u> | <u>51.13</u> | <u>58.03</u> |
| 6/17 | 538 | 161 | 24.07 | 39.51 | 37.85 | 32.24 | <u>50.99</u> | 31.12 |
| 6/24 | 587 | 175 | 28.21 | 39.61 | 33.87 | 31.69 | 47.83 | 36.26 |
| 7/1 | 529 | 155 | 25.80 | 37.04 | 34.64 | 40.00 | 30.01 | <u>58.08</u> |
| 7/8 | 533 | 111 | 21.95 | 30.57 | <u>55.70</u> | 41.29 | 29.82 | 36.51 |
| 7/15 | 588 | 118 | 19.78 | 30.79 | <u>52.16</u> | <u>52.34</u> | 30.00 | 33.82 |

Table 1

The most obvious warning signs to be found in Table 1 are in the series of ROZ values for the United Arab Republic. If the signs had been known and correctly interpreted at the time, the Egyptian record would have served as an alarm signal at least two weeks in advance of the peak of the crisis. Earlier event studies pointed to the same evidence; indeed, Nasser provoked and precipitated the crisis and the war and so there is nothing very surprising in the forewarning of unusual Egyptian event initiations. The total number of events reported in the week is found in the column of Table 1 labelled #OCC or "number of occurrences." The upward trend, contained in the week by week increases in the total event flow, is one of the basic indications of approaching crisis.

The two plots of Figure 3 furnish a visual summary of the early warning indications in the EFI-ROZ analysis of the onset of the June War. After the fact, we can see on the EFI-3 chart, the four week long downward plunge of the line as it crossed the warning zone to reach the 478 reading. The ROZ chart for the UAR pictorializes the sudden shift from the "flat" record of April and early May to the steep climb for three weeks to the high reading of 99.21 occurring one week BEFORE the crisis/war peak.

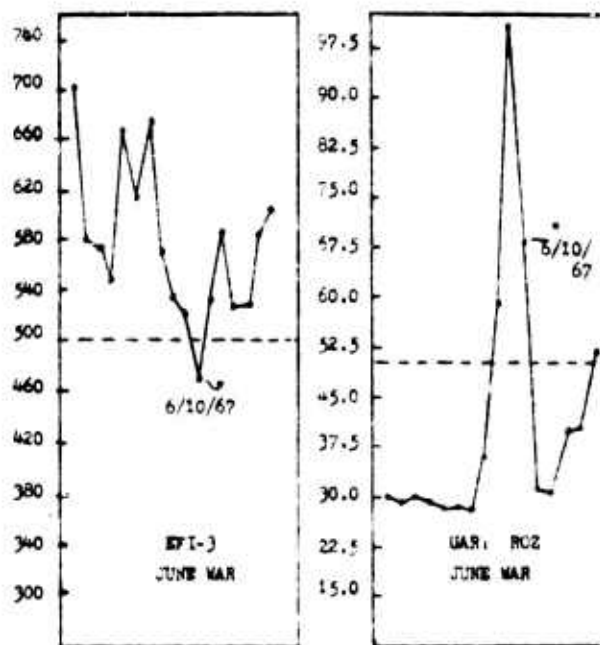


FIG. 3

Finally, we note with the assistance of the plots of Figure 4, the quantitatively mild and sympathetic response paths of the superpowers during the buildup period preceding

the overt crisis. The ROZ records for both the United States and the Soviet Union show the tendency toward growing international tension but both performances stay well below the warning levels of 70 for the United States and 50 for the Soviet Union.

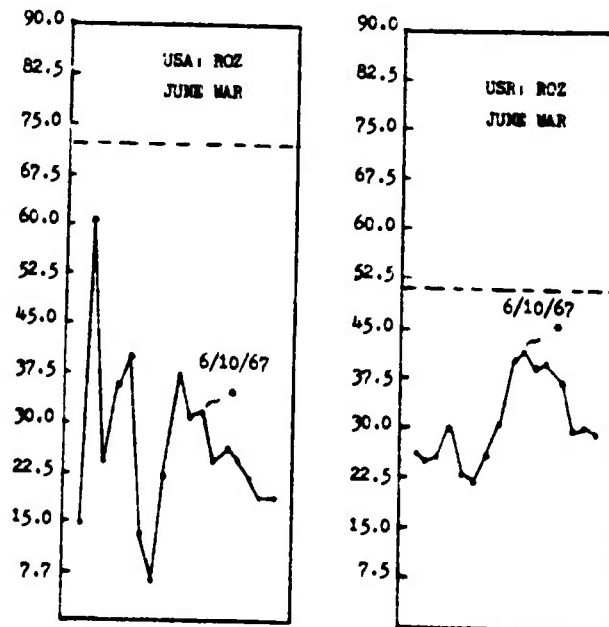


FIG. 4

2. AN ANALYSIS OF THE CZECH INTERVENTION

The pattern of review established above for the case of the June War is now to be repeated for eight more cases. This is done for two reasons: first, to illustrate some of the intricacies and sub-problems of the EFI-ROZ monitoring and warning procedure and, second, to establish the basis for the argument that the EFI-ROZ methodology deserves application and further development because it is shown to be quite powerful. Readers may not wish to travel the full distance through the detail of the cases. Figure 4 is provided to afford them an overview of the nine high tension episodes with respect to their names, their order of historical occurrence, and the time spans dominated by each. The background data appearing in Figure 5 are the total numbers of occurrences of reported events in the NEW YORK TIMES WEIS file, by month, for the ten year period.

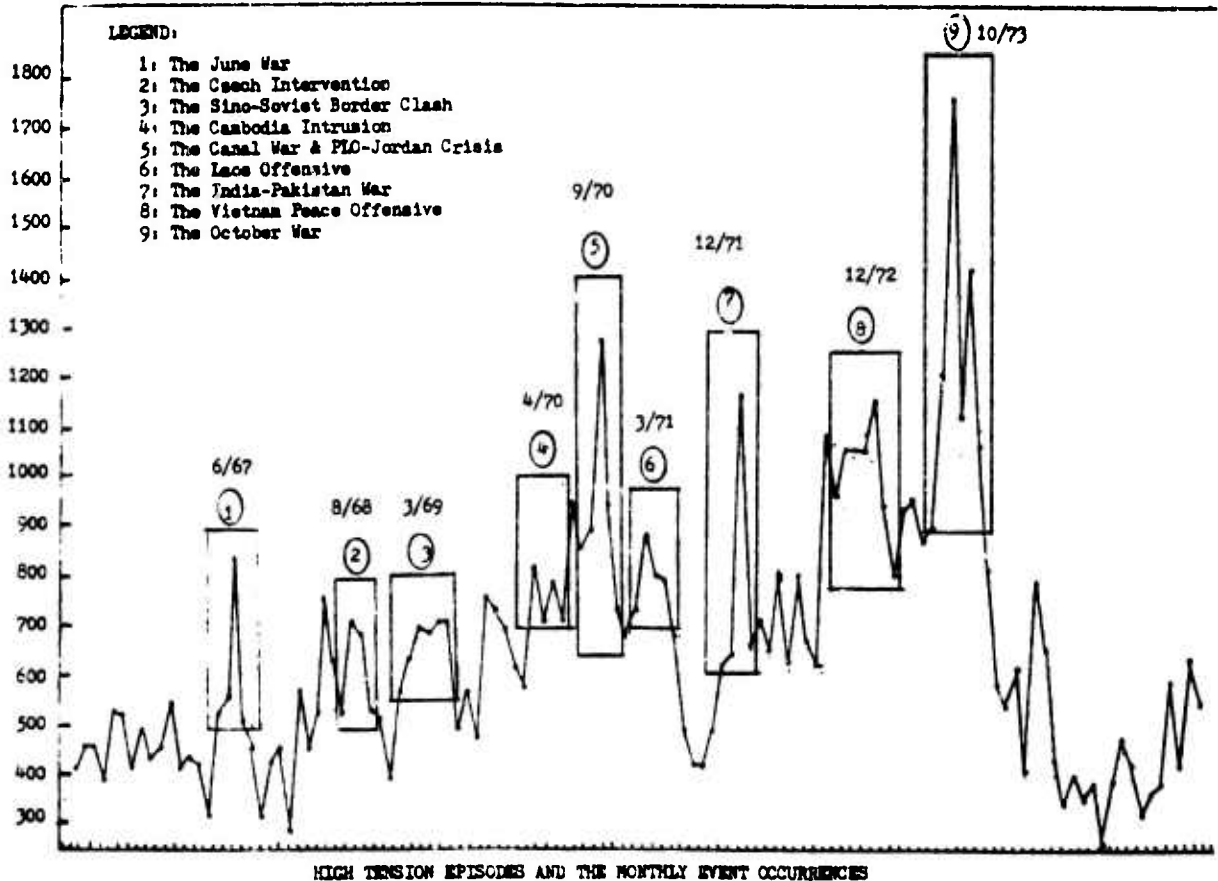


FIG. 5

Previous international event studies of the activities of the Soviet Union, Czechoslovakia, and the Eastern bloc countries in 1968 have shown that signs of Soviet disapproval of and resistance to the Czech liberalization movement appeared quantitatively as early as February. The EFI-3 index numbers fall us completely with respect to immediate early warning, however. As Figure 6 indicates, there was not even a downward trend to forecast the appearance of the below 500 reading for the August 24 week.

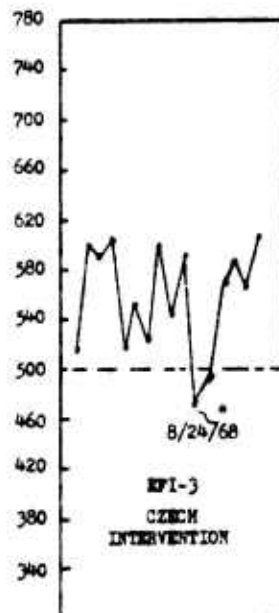


FIG. 6

Table 2, in the traceback for a ten week period, gives us the clue to the structure of action leading to the crisis. The situation developed in two stages.

② CZECH INTERVENTION

(June 15, 1968 - September 28, 1968)

New York Times File

| WEEK END | EFI-3 | #OCC | ROZ USR | ROZ CZE | ROZ RUM |
|-------------|------------|------|---------------|---------------|--------------|
| 6/15 | 516 | 165 | 34.16 | <u>70.42</u> | 31.42 |
| 6/22 | 598 | 102 | 29.41 | 30.05 | 30.12 |
| 6/29 | 589 | 114 | 29.47 | 30.04 | 30.00 |
| 7/6 | 601 | 125 | <u>70.20</u> | 30.00 | 30.00 |
| 7/13 | 519 | 176 | <u>112.26</u> | <u>50.75</u> | 30.00 |
| 7/20 | 554 | 172 | 43.04 | <u>51.23</u> | 30.11 |
| 7/27 | 523 | 188 | <u>53.88</u> | <u>54.26</u> | 38.50 |
| 8/3 | 600 | 93 | 32.71 | 46.51 | 30.00 |
| 8/10 | 644 | 97 | 26.82 | 45.85 | 31.89 |
| 8/17 | 591 | 140 | 28.71 | <u>86.30</u> | 30.21 |
| ○ 8/24 | <u>476</u> | 207 | <u>69.12</u> | <u>104.56</u> | <u>58.32</u> |
| 8/31 | <u>496</u> | 197 | 37.85 | <u>70.00</u> | 37.07 |
| 9/7 | 570 | 129 | <u>68.95</u> | 34.84 | <u>76.83</u> |
| 9/14 | 590 | 118 | 49.00 | 35.29 | 30.16 |
| 9/21 | 567 | 128 | 39.62 | 32.48 | 37.59 |
| 9/28 | 605 | 122 | 32.07 | 42.60 | 30.00 |

Table 2

The Soviet Union undertook crisis-level event initiation in the first part of July (the reading of 112.26 for the week ending July 13 is one of only two triple digit numbers appearing for the Soviet Union in the entire decade; the other occurred in the aftermath of the October War in December 1973). This raised high tension reactions in Czechoslovakia after which a "lull before the storm" appeared. There was no further clear warning; only the Czech ROZ value of 86.30 for the week ending August 17 could be read as such.

Data appearing on the master ROZ table for all the active countries but not included here show the extent to which the Czech Intervention episode was related to the Soviet-Eastern European International sub-system. Tension, as indicated in the rise of the country ROZ numbers, spread to Rumania, Poland, East Germany, and other Eastern bloc countries and continued to appear in the aftermath for several months beyond the crisis peak. The column of ROZ readings for Rumania on Table 2 shows that effect. The ROZ plots for the Soviet Union, Czechoslovakia, and Rumania help to reinforce the points made above. They appear in Figure 7.

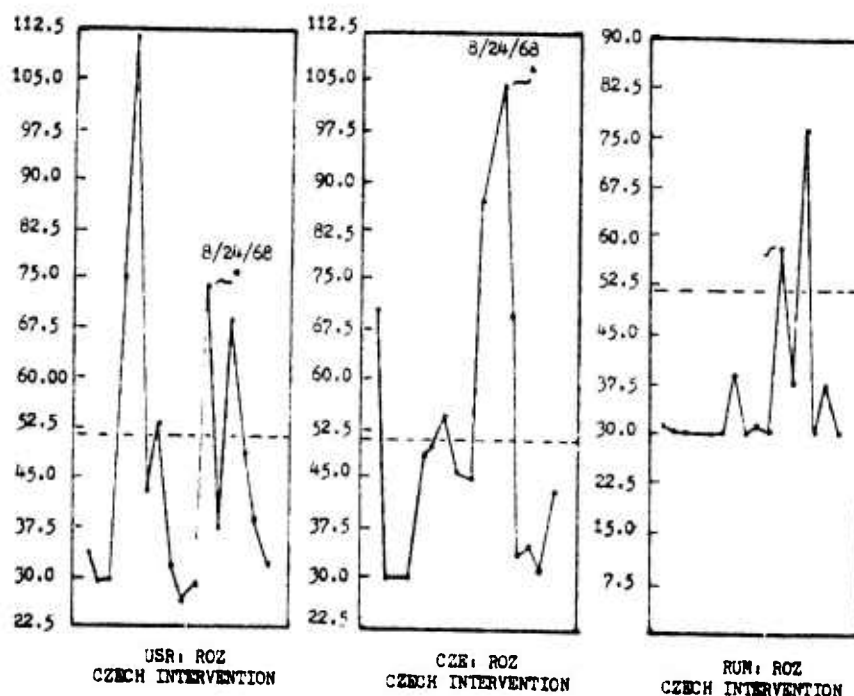


FIG. 7

3. AN ANALYSIS OF THE SINO-SOVIET BORDER CLASH

For the first time, we encounter in this case the appearance of an apparent pseudo-warning sign. The EFI alarm signal sounds one week early at the week ending March 1, 1969 with a 487 reading. The ROZ numbers reflect correctly the occurrence of the clash of Chinese and Soviet forces in the famous river boundary episode, once EFI has drawn our attention to the general time bracket. Thus the crisis point notation is shown on Table 3 at the week of March 8.

③ SINO-SOVIET BORDER CLASH

(December 21, 1968 - May 24, 1969)

New York Times File

| WEEK END | EFI-3 | #OCC | ROZ USR | ROZ CHN |
|-------------|------------|------|--------------|--------------|
| 12/21 | 603 | 124 | 29.52 | 30.77 |
| 12/28 | 564 | 126 | 30.70 | 29.16 |
| 1/4 | 520 | 166 | <u>37.04</u> | 29.48 |
| 1/11 | 575 | 116 | 35.91 | 29.34 |
| 1/18 | 615 | 151 | 28.81 | 30.00 |
| 1/25 | 577 | 165 | 37.47 | 29.86 |
| 2/1 | 521 | 146 | 28.14 | 29.27 |
| 2/8 | 507 | 184 | 32.47 | 29.42 |
| 2/15 | 522 | 179 | 26.99 | 30.53 |
| 2/22 | 566 | 131 | 37.21 | 33.58 |
| 3/1 | <u>487</u> | 230 | 35.36 | 29.91 |
| 3/8 | 611 | 113 | <u>61.15</u> | <u>64.50</u> |
| 3/15 | 510 | 166 | 45.91 | <u>53.50</u> |
| 3/22 | 526 | 163 | 46.20 | 36.35 |
| 3/29 | 511 | 150 | 30.59 | 29.42 |
| 4/5 | 555 | 136 | 49.42 | 29.85 |
| 4/12 | <u>454</u> | 212 | 46.61 | 29.64 |
| 4/19 | 507 | 175 | 38.45 | 30.00 |
| 4/26 | 525 | 142 | 33.20 | 29.39 |
| 5/3 | <u>492</u> | 150 | 27.52 | <u>52.02</u> |
| 5/10 | 554 | 133 | 44.07 | 29.42 |
| 5/17 | <u>481</u> | 187 | 32.43 | 31.38 |
| 5/24 | 517 | 176 | 32.59 | 45.67 |

Table 3

The EFI plot shown as Figure 8 indicates a general trend all during the first half of 1969 of increasing international threat. The ROZ plots of Figure 9 for the Soviet Union and China contain evidence that the confrontation of these two countries was at least partly the source of the deepening tensions being experienced in the international system. An accounting is needed, however, of what was behind the low EFI figures for March 1, April 12, and May 17. A study of the chronology text reveals the following:

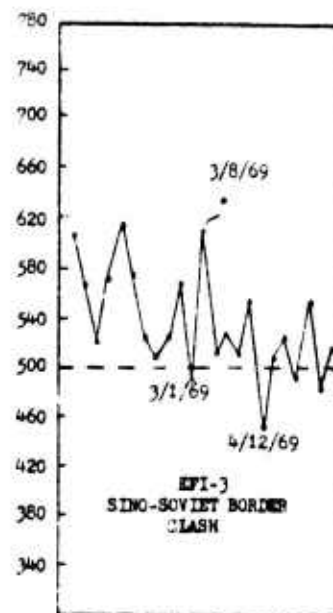


FIG. 8

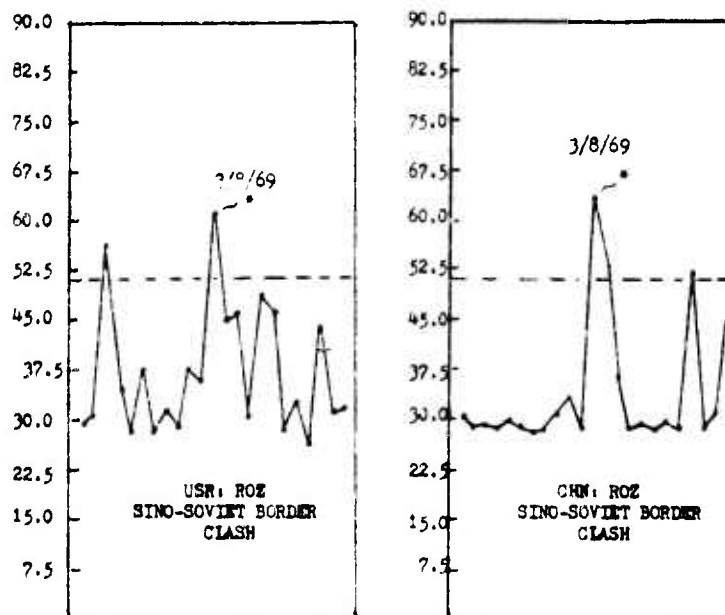


FIG. 9

The week before March 1, 1969 was very eventful. There was a compounding of affairs: A cluster of events arose around a visit to Europe by President Nixon, Prime Minister Eshkol of Israel died that week, the PLO terrorism campaign was active and was being met by Israeli reprisal raids and air battles with the Syrians. Most significant were the evidences of the mounting of a mini-Berlin-crisis. Elections to be held in West Berlin were being challenged by the East, there were some blockages of access by the East, and Big Four power interests obviously were being stimulated by the confrontation activities. Confirmation that the trouble of the week ending March 1 was centered not on Sino-Soviet relations but on German relations is obtained by a check of the ROZ charts: three countries had crisis-level readings that week. The score for West Germany stood at 62.22, East Germany was at 50.84, and the United States had a reading of 83.08, due without question to the activity of the Nixon visit. Thus, the warning of EFI was false for Sino-Soviet affairs but true for affairs at the old crisis site of Berlin. Unless we invoke the contagion principle, which is a very tempting thing to do given remembered examples from 1960 and the instances for cases yet to be reviewed here (the October War and the Cyprus Crisis), we must conclude that the EFI-ROZ analysis points to the wrong crisis location. This blow can be softened and diverted by setting forth the monitoring rule that EFI-ROZ analysis points to the wrong crisis location. This blow can be softened and diverted by setting forth the monitoring rule that EFI-ROZ warning signs raised from any quarter should stimulate redoubled scanning activities looking for trouble from all quarters. Poisson distribution effects or contagion-causation can be cited as reasons. There being no imperative for events to happen at some precise time, perhaps the news of high tension happenings in one place tends to trigger crisis event initiations at other places.

The false alarm suspected in the EFI score for March 1 is questionable but that for the week ending April 12, 1969 is not. Outbreaks of violence in the Middle East, Vietnam, and the Koreas may have contributed but the ROZ readings for all countries, save the United States, are well below the warning line. No particular focus of American activity is found in the chronology descriptions. We conclude that the EFI value of 454 is not significant either in the Sino-Soviet confrontation or elsewhere.

Further inspection of the ROZ tables and the event chronology descriptions for the week ending May 17 lead to the conclusion that the EFI reading of 481 is another pseudo-warning sign. In fact, the week of May 17 and the

earlier period of the week ending April 12 virtually are quantitative duplicates.

Before anyone else can do it, we supply the comment that the Sino-Soviet border dispute case is not traced with great distinction or with great precision by the EFI-ROZ methodology.

4. AN ANALYSIS OF THE CAMBODIA INCURSION

The event flows of 1970 present very complex problems from the standpoint of quantitative analysis. It is surprising that the EFI-ROZ procedure sorts them as well as it does. Three violent conflicts were co-occurring during the year. The Arab-Israeli struggle had moved into a particularly intense phase with "air terrorism," killings and destruction in guerrilla-type attacks and counterattacks called by the Israelis the "war of attrition," and, significantly, beginning as early as February 1970, the running battle on, over, and alongside the Suez Canal between Egyptian and Israeli forces. This phase of the conflict escalated by late summer into "the canal war." At least one of the early EFI lows shown on Table 4 (that for February 14) connects certainly with the beginning of the canal fighting.

A regional crisis occurred in October and November 1969 and involved the Lebanese government, the Palestine Liberation Organization leadership, Syria, and other Arab states. This started the blaze that flared intermittently through 1970 and that burst forth with exceptional intensity in September in the PLO-Jordan conflict. (ROZ reading for the PLO for the weeks of November 1 and November 8, 1969 reached the highs of 102.16 and 62.34 and for Lebanon they were 97.38 and 56.98--all in the crisis range).

④ CAMBODIA INCURSION

(February 7, 1970 - May 23, 1970)

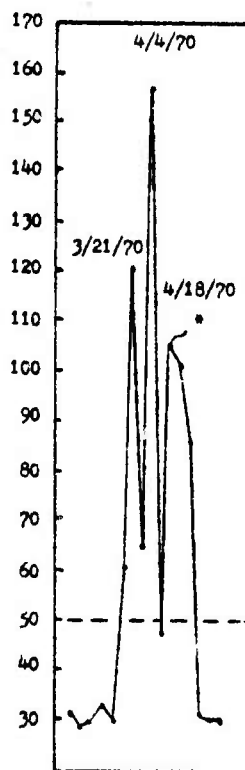
New York Times File

| WEEK END | EFI-3 | #OCC | ROZ USA | ROZ CAM | ROZ VTN | ROZ VTS | ROZ USR |
|-------------|------------|------|---------------|---------------|------------|--------------|------------|
| 2/7 | 515 | 177 | 26.22 | 31.26 | 30.35 | 30.00 | 41.92 |
| 2/14 | <u>464</u> | 242 | 45.49 | 29.99 | 34.81 | 29.90 | 47.47 |
| 2/21 | <u>495</u> | 183 | <u>80.43</u> | 30.00 | 30.32 | 30.83 | 32.65 |
| 2/28 | <u>482</u> | 211 | 45.20 | 33.20 | 29.83 | 30.00 | 34.52 |
| 3/7 | 536 | 199 | 49.41 | 30.00 | 29.63 | 30.00 | 28.52 |
| 3/14 | 539 | 154 | 26.76 | <u>61.35</u> | 29.52 | 29.71 | 28.73 |
| 3/21 | 527 | 161 | 31.72 | <u>120.45</u> | 44.08 | 29.66 | 37.85 |
| 3/28 | 569 | 131 | 23.12 | <u>65.62</u> | 36.48 | 31.21 | 33.64 |
| 4/4 | 517 | 160 | 23.53 | <u>157.05</u> | 32.38 | 29.57 | 27.72 |
| 4/11 | 581 | 137 | 21.65 | 48.26 | 29.65 | 29.90 | 28.73 |
| ○ 4/18 | <u>473</u> | 223 | <u>143.06</u> | <u>105.12</u> | 30.86 | 30.00 | 46.93 |
| 4/25 | <u>453</u> | 228 | 69.50 | <u>101.35</u> | 33.70 | <u>57.77</u> | 46.08 |
| 5/2 | 503 | 171 | 23.22 | <u>86.43</u> | 41.04 | 32.62 | 37.56 |
| 5/9 | 557 | 216 | 25.53 | 31.49 | 43.53 | 36.96 | 28.65 |
| 5/16 | 590 | 87 | 13.45 | 30.00 | 28.72 | 29.63 | 27.58 |
| 5/23 | 586 | 135 | 19.56 | 30.00 | 29.02 | 30.00 | 26.24 |

Table 4

The third scene of violent conflict was, in 1970, on the Indochina peninsula and in Laos and Cambodia, in particular. Reports of heavy fighting in Laos, along the Cambodia border, and against the North Vietnamese supply routes and sanctuaries were frequent from the beginning of 1970. (All these event reports have been deleted in the data base for EFI and ROZ). The triggering event was, however, the overthrow of Prince Sihanouk as head of the Cambodian state in March. The effect this happening produced is traced quite dramatically by the Cambodia ROZ scores appearing on

Table 4 and the charting in Figure 10. The peak period is identified as that of the week ending April 18, although the Cambodian action reached its crisis maximum earlier. The involvement of the United States, shown by a triple digit ROZ reading, was exceptional. There are seven triple digit ROZ values on the 10 year record for the United States. Only three of these are higher than that of the Cambodia week.



CAM: ROZ
CAMBODIA
INTERVENTION

FIG. 10

The coming and going of the Cambodia crisis are well marked by the EFI-ROZ monitor.

5. AN ANALYSIS OF THE CANAL WAR AND THE PLO-JORDAN CRISIS

The event patterns and sequences of the Middle East affairs in 1970 resemble in some fascinating ways the patterns and sequences of affairs in that region in 1975-76. One obvious parallel is in the shift from confrontation to temporary accommodation on the "southern front" in Egyptian-Israeli relations, with American assistance and encouragement, and then, immediately, to a sharp inter-Arab

clash on the "northern front," the latter outbreak not being unrelated to the preceding accommodation. What has not occurred so far in the Lebanon-PLO-Syria quarrel of 1975-76 is the deep entrainment of the superpowers in the affair. The aftershock involvement of the U.S. and the Soviet Union following the peak stage of PLO-Jordan confrontation is one of the more interesting and important aspects of the 1970 episode.

The EFl chart (Fig. 11) for the combined canal war and PLO-Jordan confrontation is to be noticed especially for the warning signs carried in the general trend toward crisis. The progression from June 13 (499), to August 1 (481), to September 12 (468) to the trough reading of 448 for September 19 is impressive.

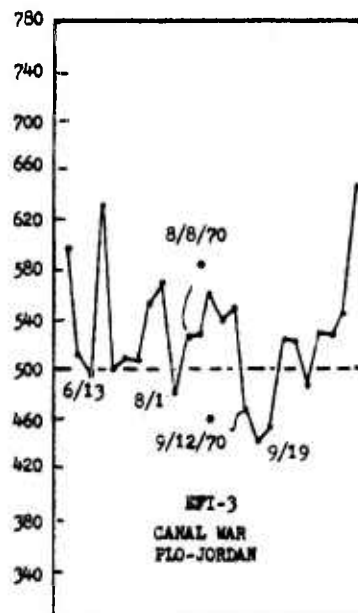


FIG. 11

The United Arab Republic can be regarded as the "leading actor" in the canal war as is suggested quantitatively and graphically by the path taken by the Egyptian ROZ performance to the peak time of August 8. On the other hand, the ROZ chart for Israel contains a very fine example of an early warning sequence that also peaks at the August 8 date. Figure 12 facilitates a side by side graphic comparison.

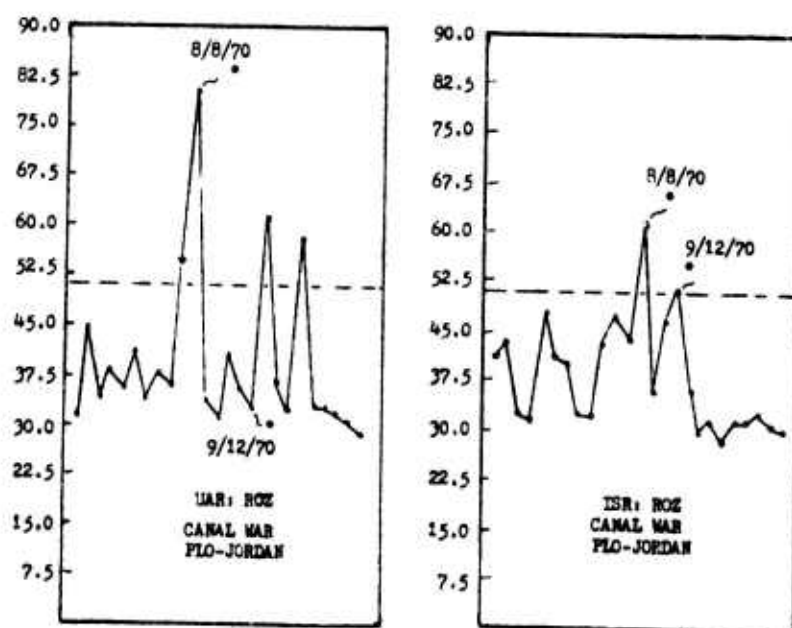


FIG. 12

Table 5, which encompasses the basic data for both the canal war and the PLO-Jordan conflict, is unusually clear in delineating the convergence of the EFI and ROZ indicators on the September 1970 sequence. Beginning with Jordan's crisis-level event initiation during the week ending September 5, the major antagonists--Jordan and the PLO--kept the tension level high through the rest of the month. Presumably, the danger in the situation then attracted the world powers into the fray. The danger that Israel might be drawn into the war is fairly well established in the diplomatic history of the period (21). The ROZ highs of 110.64 for the U.S. and 81.51 for the Soviet Union suggest not only embroilment but, possibly, antagonism of the principals. Figures 13 and 14 give visual dimension to these speculations.

⑤ CANAL WAR; PLO-JORDAN WAR
 (May 30, 1970 - November 14, 1970)
 New York Times File

| WEEK END | EFI-3 | #OCC | ROZ USA | ROZ UAR | ROZ ISR | ROZ PLO | ROZ JOR | ROZ USR |
|-------------|------------|------|---------------|--------------|--------------|---------------|---------------|--------------|
| 5/30 | 597 | 191 | 21.37 | 30.16 | 41.64 | 30.41 | 29.69 | 27.19 |
| 6/6 | 512 | 233 | 22.91 | 43.47 | 43.64 | 31.83 | 31.41 | 30.56 |
| 6/13 | <u>499</u> | 244 | 27.68 | 34.39 | 33.15 | <u>90.50</u> | 32.15 | <u>55.39</u> |
| 6/20 | 633 | 192 | 20.25 | 37.18 | 32.36 | 30.37 | 33.51 | 27.75 |
| 6/27 | 500 | 213 | 38.25 | 35.64 | 48.14 | 34.55 | 29.95 | 28.48 |
| 7/4 | 508 | 195 | 23.81 | 40.28 | 41.13 | 35.04 | 29.96 | 29.57 |
| 7/11 | 507 | 182 | 43.69 | 34.74 | 39.48 | 35.19 | 31.63 | 33.37 |
| 7/18 | <u>554</u> | 162 | 38.39 | 37.36 | 33.76 | 29.77 | 29.71 | 29.49 |
| 7/25 | 570 | 204 | 34.10 | 35.20 | 33.61 | 30.37 | 30.00 | 26.97 |
| 8/1 | <u>481</u> | 234 | 22.96 | <u>54.69</u> | 42.16 | 35.53 | 31.26 | 30.50 |
| ○ 8/8 | 525 | 236 | 26.05 | <u>80.72</u> | 47.04 | 36.87 | 39.83 | 32.45 |
| 8/15 | 529 | 191 | 22.07 | 34.15 | 43.82 | 36.28 | 45.12 | 42.16 |
| 8/22 | 560 | 161 | 42.10 | 30.14 | <u>61.37</u> | 42.83 | 30.61 | 27.04 |
| 8/29 | <u>540</u> | 212 | 32.91 | 40.11 | 35.98 | <u>82.22</u> | 38.04 | 37.12 |
| 9/5 | 549 | 227 | 36.27 | 35.50 | 47.68 | 45.56 | <u>52.16</u> | 27.87 |
| ○ 9/12 | <u>468</u> | 317 | 34.71 | 32.37 | <u>51.57</u> | <u>273.40</u> | <u>54.37</u> | 28.99 |
| 9/19 | <u>448</u> | 314 | 43.08 | <u>61.85</u> | 36.66 | <u>152.56</u> | <u>102.79</u> | 30.32 |
| 9/26 | <u>457</u> | 309 | 48.46 | 36.20 | 30.57 | <u>137.04</u> | <u>136.94</u> | 35.49 |
| 10/3 | 524 | 272 | <u>110.64</u> | 32.77 | 31.24 | 38.76 | 45.15 | <u>81.51</u> |
| 10/10 | 522 | 226 | 50.79 | <u>58.23</u> | 29.22 | 36.33 | 30.51 | <u>53.01</u> |
| 10/17 | <u>488</u> | 211 | 65.56 | 33.44 | 32.39 | 38.77 | 33.68 | 38.32 |
| 10/24 | 532 | 229 | 59.40 | 33.08 | 32.13 | 29.94 | 32.04 | 42.70 |
| 10/31 | 532 | 171 | 36.56 | 32.92 | 34.13 | 29.82 | 29.78 | <u>93.15</u> |
| 11/7 | 546 | 164 | 46.24 | 30.12 | 31.05 | 30.94 | 32.78 | <u>66.53</u> |
| 11/14 | 649 | 142 | 23.20 | 29.00 | 30.00 | 38.97 | 29.68 | 41.40 |

Table 5

Inviting explanation is the appearance of a seemingly very late reaction by the Soviet Union at the end of October and the beginning of November. The high readings of 93.15 and 66.53 at these periods readily suggest delayed reactions to the Middle East upheaval. Inspection of the chronology reveals, however, that they are false signs on the ROZ chart. The Soviet Union, late in October and early in November experienced a series of minor affairs--an attack on a Soviet guard at Berlin, the hijacking of a Soviet aircraft, an alleged violation of Soviet air space by American personnel, some Soviet visits abroad, and a somewhat unusual spate of reports about Soviet policy positions.

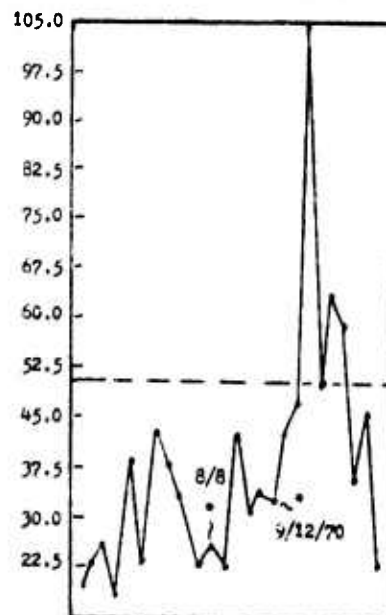
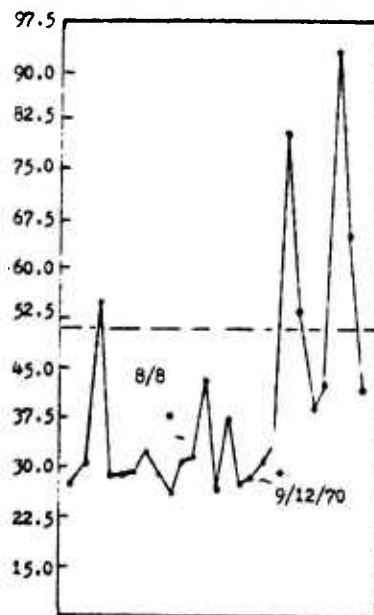


FIG. 13

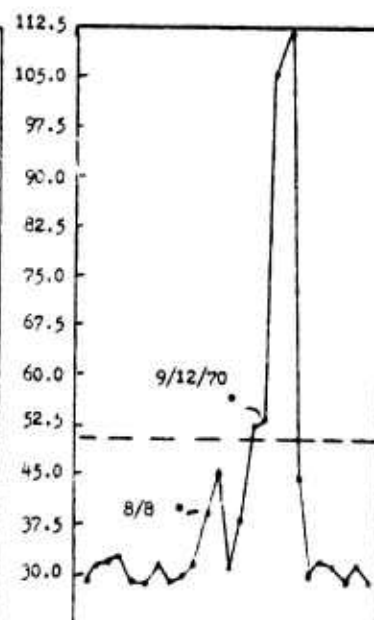
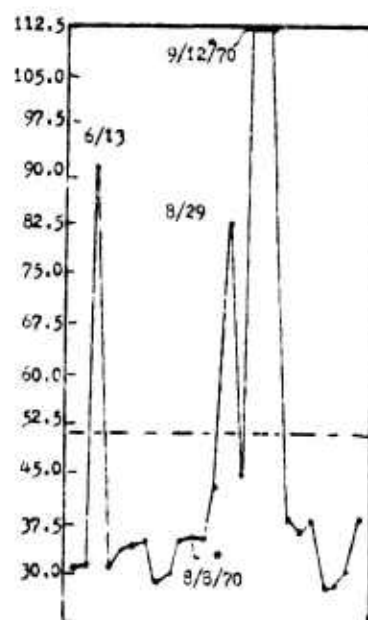


FIG. 14

The foregoing review of the complex interweaving of the streams of conflict in 1970 gives support to the contention that the quantitative tracings fit the historical configuration of Middle East conflict relations reasonably well. This occurs without resort to local or regional system news sources--a requirement that some Middle East specialists have insisted upon as completely essential (22).

6. AN ANALYSIS OF THE LAOS OFFENSIVE

Intensive selective forgetting allows us to enjoy a very poor recall of the passing features of the Vietnam war. High hopes existed at the opening of the campaigning season in 1971 that the South Vietnamese army and airforce would turn the war around and begin a triumphant drive in the direction of Hanoi. This accounts, probably, for the plain indication of the EFI lows of February and March of 1971 that a notable high tension episode unfolded at that time. It is probable that newspaper sources other than the NEW YORK TIMES would produce a fainter tracing. The high readings underlined for the ROZ scores for the United States and the North Vietnam tell the main story in their patterning. Table 6 indicates the main findings: (1) the Laos offensive was an American show (note the 162.36: the highest U.S. triple digit reading on the 10 year record), (2) North Vietnam was the second party in the relationship, leaving South Vietnam, the ostensible principal, not quite, but almost out of the picture. Early warnings appear strong. The EFI plot of Figure 15 is a solid representation of a sustained crisis period.

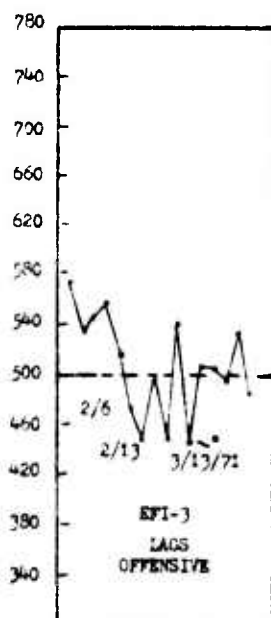


FIG. 15

⑥ LAOS OFFENSIVE

(January 2, 1971 - April 17, 1971)

New York Times File

| WEEK END | EFI-3 | #OCC | ROZ USA | ROZ VTN | ROZ VTS | ROZ USR |
|-------------|------------|------|---------------|--------------|--------------|--------------|
| 1/2 | 574 | 135 | 16.14 | 29.23 | 29.46 | 37.62 |
| 1/9 | 536 | 182 | 50.31 | 35.79 | 29.61 | 36.75 |
| 1/16 | 544 | 164 | 20.62 | 29.24 | 29.88 | 27.07 |
| 1/23 | 559 | 144 | 30.70 | 31.61 | 29.87 | 29.46 |
| 1/30 | 517 | 203 | 60.45 | 30.32 | 30.40 | 28.63 |
| 2/6 | <u>472</u> | 224 | 50.62 | 41.58 | 29.92 | <u>50.95</u> |
| 2/13 | <u>447</u> | 258 | <u>54.57</u> | 39.51 | <u>85.85</u> | 41.43 |
| 2/20 | <u>497</u> | 177 | <u>80.43</u> | <u>54.51</u> | 33.80 | 27.77 |
| 2/27 | <u>449</u> | 236 | <u>96.06</u> | <u>57.35</u> | 49.68 | <u>65.83</u> |
| 3/6 | 540 | 149 | 23.53 | <u>66.40</u> | <u>63.44</u> | 30.66 |
| ○ 3/13 | <u>442</u> | 213 | <u>162.36</u> | <u>51.39</u> | 32.90 | 29.12 |
| 3/20 | 502 | 160 | <u>78.64</u> | 46.25 | <u>62.69</u> | 27.27 |
| 3/27 | 501 | 159 | 40.67 | <u>55.44</u> | 42.91 | 30.61 |
| 4/3 | <u>496</u> | 214 | 31.55 | 32.01 | 36.51 | <u>98.37</u> |
| 4/10 | 532 | 164 | 32.09 | 43.95 | 36.45 | 28.60 |
| 4/17 | <u>483</u> | 187 | 55.18 | 34.71 | 30.40 | 27.84 |

Table 6

The ROZ plots of Figure 16 for the United States and North Vietnam are among our best examples of trend patterns that, at least in postdictions, give several weeks of warning of the coming of climactic dangers.

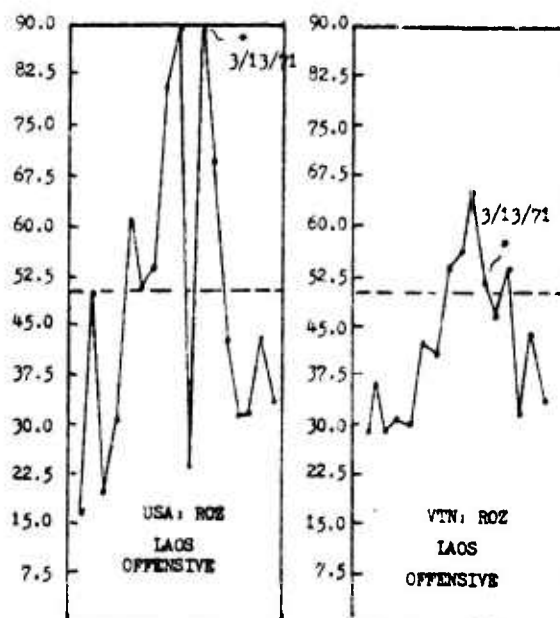


FIG.16

7. AN ANALYSIS OF THE INDIA-PAKISTAN WAR

The problem with the approach of the India-Pakistan war of December 1971 is not to detect early warning signs of its coming. Mrs. Gandhi travelled the world in the summer of 1971 to let everyone know what would soon eventuate. The trouble was either that she was not believed or that she was believed but nobody wanted really to do anything about it. One of the well-remembered frustrations from the WEIS project days was the inability of the methodology then being followed (the study of the "dyads" and the use of month observation periods) to reflect any trace of what was well known about the warning signs given in the summer and fall of 1971 by principals and observers, alike. India and Pakistan had no "track record" to speak of in the event file with respect to pair interaction. Without apparent preliminaries, the two countries abruptly became the major generators of world tension. ROZ values appearing on Table 7 of 374 and 339 are evidence of how extraordinary it was to have India and Pakistan at the center of the stage of world affairs.

⑦ INDIA-PAKISTAN WAR

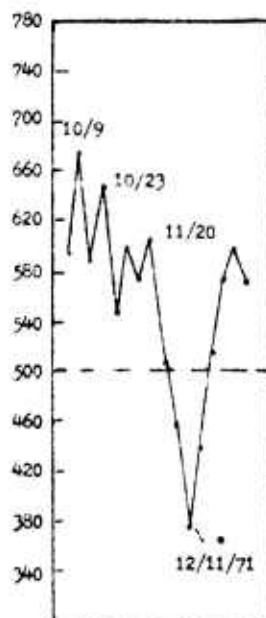
(October 2, 1971 - January 15, 1972)

New York Times File

| WEEK END | EFI-3 | #OCC | ROZ USA | ROZ USR | ROZ CHN | ROZ IND | ROZ PAK |
|-------------|------------|------|------------|--------------|--------------|---------------|---------------|
| 10/2 | 593 | 154 | 22.44 | <u>79.30</u> | 29.37 | 33.35 | 30.69 |
| 10/9 | 674 | 120 | 17.30 | 49.30 | 29.10 | 29.94 | 30.99 |
| 10/16 | 584 | 163 | 63.54 | <u>60.78</u> | 29.41 | 29.95 | 29.90 |
| 10/23 | 648 | 106 | 22.01 | 32.74 | 29.16 | 33.10 | 30.00 |
| 10/30 | 544 | 180 | 25.49 | <u>51.60</u> | 43.84 | 41.95 | 44.44 |
| 11/6 | 596 | 131 | 27.43 | 27.57 | 32.30 | 41.01 | 31.96 |
| 11/13 | 576 | 137 | 36.85 | 27.87 | 42.73 | 38.51 | 35.50 |
| 11/20 | 604 | 135 | 30.66 | 29.49 | <u>57.15</u> | 43.30 | 33.31 |
| 11/27 | 502 | 193 | 44.12 | 33.90 | 43.19 | <u>51.81</u> | <u>77.48</u> |
| 12/4 | <u>458</u> | 234 | 63.90 | 28.88 | 36.41 | <u>167.15</u> | <u>135.79</u> |
| ○ 12/11 | <u>377</u> | 402 | 53.05 | 31.29 | 35.57 | <u>374.00</u> | <u>339.09</u> |
| 12/18 | <u>438</u> | 300 | 64.55 | 38.93 | 39.59 | <u>260.93</u> | <u>206.79</u> |
| 12/25 | 516 | 181 | 36.78 | 40.59 | 42.50 | 46.19 | 31.51 |
| 1/1 | 574 | 137 | 24.70 | 29.46 | 29.29 | 44.02 | 30.18 |
| 1/8 | 599 | 130 | 28.85 | 28.79 | 29.48 | 38.59 | 47.51 |
| 1/15 | 570 | 195 | 21.73 | 27.50 | 30.00 | 34.56 | 34.07 |

Table 7

How letting the displacement of the whole international vent stream by tension and crisis inducing inputs serve as the indicating device in the monitoring and warning system could not be illustrated much more satisfactorily than by the EFI tracing shown in Figure 17 for the onset of the India-Pakistan struggle. It is a superb warning configuration.



EPI-3

INDIA PAKISTAN WAR

FIG. 17

The ROZ plots in Figure 18 clinch the case, with the Indian warning pattern being close to perfect with respect to early warning.

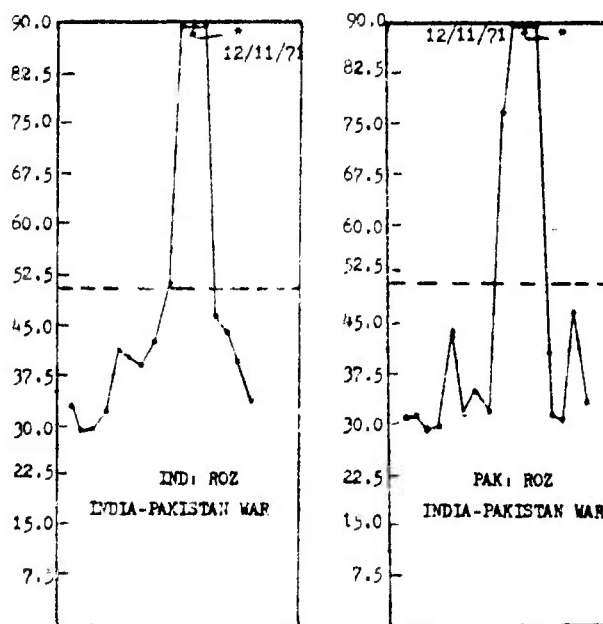


FIG. 18

8. AN ANALYSIS OF THE VIETNAM PEACE OFFENSIVE

The main, final effort to remove the Vietnam war from the world scene, very important and extremely interesting from the standpoint of historical reconstruction, does not present a commanding case of international event analysis. The research requirements for historical writing and the methodological circumstances of event analysis are two entirely different things. Confusion results from the failure to differentiate the two, one such consequence is to be found in the morass of literature in international relations on the unfortunate topic of "source validity."

In the history of the "winding down" of the Vietnam war, chief attention goes to the U.S.-Vietnamese negotiations that, by October 1972, apparently had all but achieved their goal of a settlement. The famous Kissinger phrase, "peace is at hand," belongs to that period. Then, the basis of agreement appeared to crumble, a very puzzling and frustrating round of activity ensued that left the American negotiators harassed and discouraged, a 72 hour ultimatum was delivered to North Vietnam in mid-December and in the face of no response, the American administration made the crisis decision to use the big stick. The incredible B-52 attacks on Hanoi and Haiphong followed at Christmas time. There evolved thereafter a period when the extreme tension began to reduce and when negotiations were resumed: success again began to appear in the offing. The landmark cease-fire agreement was reached at last on January 23, 1973. The United States began the last stage of withdrawal from the conflict. The foregoing are barebones facts of provisional current history. Documentary accumulations of vast scope will grow around this episode as well as around many others of the Vietnam war and historical writings will proliferate, developing endless facets of a host of topics. The way of history is to accumulate, collate, and re-interpret while the way of quantitative event analysis, still very much an unexplored terrain, is to collect, to select, to reduce, and then to calculate. The two have very different orientations.

The international event flow in the Vietnam peace offensive episode indicates little in the way of warning information. It is a different kind of case. The data of Table 8 show mainly the convergence of many EFI and ROZ readings. We see crisis-level values for EFI-3 and by reading across, we "account for" these by noting the corresponding crisis-level ROZ scores for the countries. The comparisons account for why the EFI lows appeared.

⑧ VIETNAM PEACE OFFENSIVE

(October 14, 1972 - April 7, 1973)

New York Times File

| WEEK END | EFI-3 | #OCC | ROZ USA | ROZ VTN | ROZ VTS | ROZ VCG |
|-------------|------------|------|---------------|---------------|---------------|---------------|
| 10/14 | 635 | 160 | 30.80 | 35.77 | 38.58 | 30.00 |
| 10/21 | 565 | 230 | 36.00 | 30.33 | 38.91 | 30.00 |
| 10/28 | 500 | 245 | 54.02 | <u>68.66</u> | <u>84.78</u> | 34.58 |
| 11/4 | <u>484</u> | 276 | 44.43 | <u>57.86</u> | <u>55.89</u> | 32.92 |
| 11/11 | 541 | 224 | 66.40 | <u>85.45</u> | 33.42 | 30.70 |
| 11/18 | <u>457</u> | 268 | 67.55 | 49.60 | <u>56.74</u> | 31.46 |
| 11/25 | 507 | 258 | 45.37 | <u>56.53</u> | 35.48 | 30.07 |
| 12/2 | 563 | 215 | 27.33 | 48.22 | 32.09 | 29.83 |
| 12/9 | 531 | 239 | 51.41 | 42.02 | <u>94.42</u> | 30.70 |
| 12/16 | 573 | 202 | 29.13 | <u>63.87</u> | 37.93 | 34.02 |
| ○ 12/23 | <u>476</u> | 313 | <u>90.03</u> | <u>83.54</u> | 38.08 | 33.19 |
| 12/30 | <u>490</u> | 213 | 37.02 | <u>102.40</u> | 40.28 | 35.00 |
| 1/6 | 511 | 216 | <u>70.49</u> | <u>78.36</u> | 36.39 | 35.18 |
| 1/13 | <u>496</u> | 237 | 30.41 | <u>74.79</u> | 30.00 | 30.00 |
| 1/20 | 520 | 232 | 46.92 | 37.60 | <u>50.43</u> | 30.69 |
| 1/27 | <u>496</u> | 259 | 49.04 | <u>56.98</u> | 49.43 | 32.51 |
| 2/3 | <u>498</u> | 270 | <u>143.95</u> | 41.51 | <u>65.33</u> | 31.37 |
| 2/10 | <u>478</u> | 267 | <u>117.67</u> | 35.75 | 39.21 | 31.27 |
| 2/17 | <u>438</u> | 311 | <u>159.24</u> | 36.07 | <u>73.55</u> | <u>50.81</u> |
| 2/24 | <u>472</u> | 278 | <u>93.62</u> | 31.36 | <u>80.20</u> | 39.06 |
| 3/3 | <u>456</u> | 303 | <u>91.27</u> | <u>107.56</u> | <u>57.94</u> | 38.00 |
| 3/10 | 578 | 191 | 45.80 | <u>50.36</u> | 45.38 | <u>69.65</u> |
| 3/17 | 541 | 193 | <u>102.54</u> | 37.64 | 39.94 | 34.85 |
| 3/24 | <u>483</u> | 230 | <u>76.64</u> | 38.07 | <u>78.64</u> | <u>57.63</u> |
| 3/31 | 517 | 207 | 60.52 | 44.23 | 42.32 | <u>53.67</u> |
| 4/7 | 502 | 266 | <u>87.98</u> | 37.69 | <u>127.35</u> | <u>105.10</u> |

Table 8

Three features of the data on the table are worth special mention. First, it can be seen readily from both the EFI and ROZ readings that extensive activity continued beyond both the crisis week of December and the settlement date of January. Second, the extraordinary exertion of the United States, after the date of the Cease-fire and as shown in the unusual ROZ numbers of 143, 117, and 159, is very interesting. Third, one finds at the bottom of the table, the signs of North Vietnamese relaxation and the shifting of the event flow of interactions to South Vietnam and the Vietcong. Not indicated by the table but clearly apparent on the master ROZ tables is the shrinkage of the Vietnam event stream to obscurity after the last spasm of activity during the week of April 7, 1973. From that date to the final stage in March and April 1975, ROZ readings for North and South Vietnam and the Vietcong hover around the 30 level, indicating low activity and minimal event reporting.

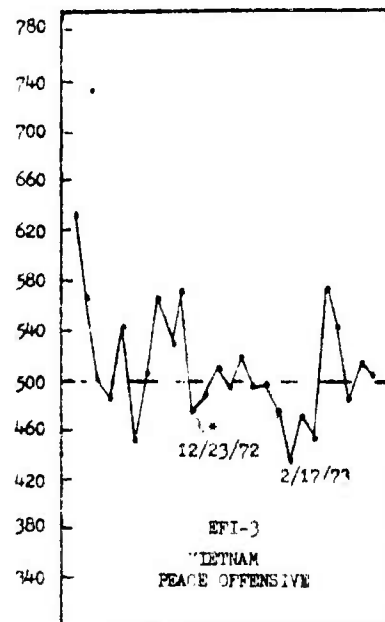


FIG. 19

The EFI plot contained in Figure 19 shows us little beyond the fact that the period from November 1972 through February 1973 was a tense and stressful time in international affairs. The ROZ plots of Figure 20 are worth a glance for the speculative thought raised in looking from the "fever chart" for the United States to that for North Vietnam. It appears that as the United States increased the

pressure and tension--turned the screw, in effect--the Vietnamese response (shown by the general downtrend of the charting) was, indeed, to let go, to relax, and to withdraw progressively from the action.

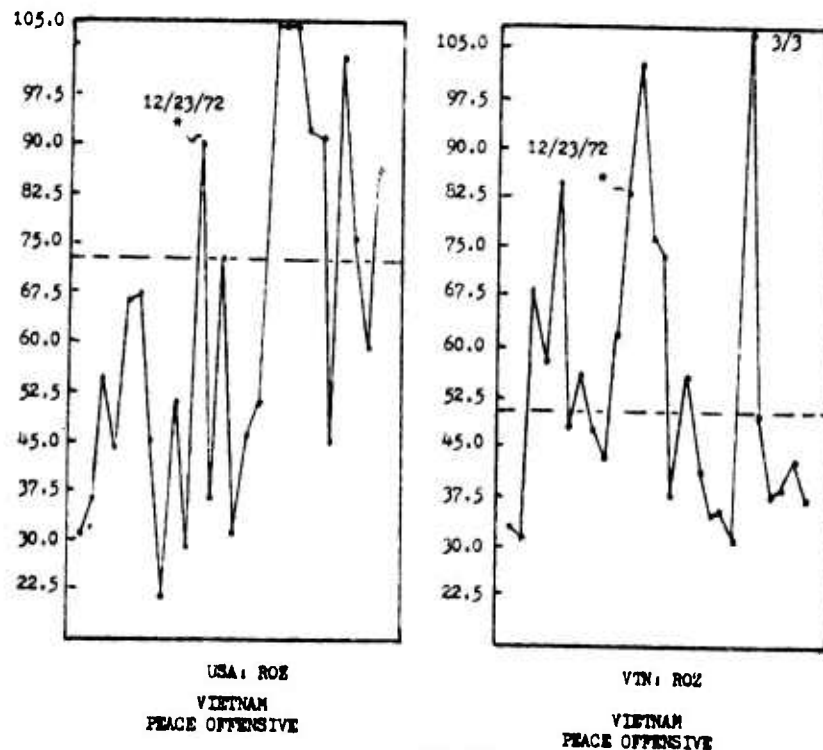


FIG. 20

9. AN ANALYSIS OF THE OCTOBER WAR

If, in the review of the EFI-R0Z tracings of nine episodes of high international tension, the Sino-Soviet border dispute and the Vietnam peace offensive are the weaker cases, then the case of the October war is one of the stronger. The argument was set forth earlier, that if the EFI-R0Z system had been installed, working, and attended to, the surprise of the onset of the October war would have been removed or, possibly, just greatly reduced. If the outbreak had not been anticipated with respect to exact time and place, it should have found everyone on the alert for trouble from somewhere. The sequence of EFI lows, running from September 1 through November 17 is, in any case, a notable series on the ten year event record.

The R0Z data shown on Table 9 provide some problems and require some explanations. We see that the major contributor to the EFI lows of 444 and 497 early in September was,

perhaps surprisingly, the United Nations. The next week, the United States appears to have been a principal source of the crisis reading for the system. Following that, somewhat strangely, we note the Soviet Union and the United Nations both operating at the stress level for a week. The United States joins these two the next week. In the last week before the full crash of the October 13 period, we see the U.S. operating alone at a crisis level. The question needing an answer is what were the United States, the Soviet Union, and the United Nations doing in September 1973?

A study of the event descriptions for the week ending September 1 does reveal why the U.N. event initiation record reached the 148 level. Secretary General Waldheim was on a peace-seeking mission in the Middle East that week, visiting Lebanon, Syria, Cyprus, and Israel and, thus, giving occasion for many event reports. It must be said, however, that other matters were also United Nations concerns at that time--for example, the committee on colonialism was deliberating on the Puerto Rico case and there was active verbal traffic on the issue of air hijacking, the Israeli airforce having forced down a Lebanese airliner on August 10. No sense of crisis is conveyed in the review of the items of the event file for the week. On the other hand, a lower ROZ score of 54 for the United Nations the following week is accounted for definitely in the reports of the continuation of the peace-seeking tour of the Secretary General to Egypt, Jordan, and other Middle East countries. The orientation, nevertheless, is one of problem-solving rather than crisis management. We support our argument by noting that world attention was being called to the Middle East conflict. Symbolic content travels covertly in the stream of the "rational," overt event reports (23).

The ROZ crisis-level score of 75 for the United States is explained by noting that during the week of September 15, American attention rode off in all directions except toward the Middle East. Activity was related to trade negotiations at a GATT meeting in Tokyo, to conferring on security matters with South Korea, to the high politics of criticism and cooperation with the Soviet Union, to Olympic Games decisions for 1980, and to other economic and social non-crisis preoccupations. The index was driven up, however, mainly by the reports of U.S. response to the overthrow of the Allende regime in Chile. That was the sensational news of the week.

9 OCTOBER WAR

(August 4, 1973 - December 29, 1973)

New York Times File

| WEEK END | EFI-3 | #OCC | ROZ USA | ROZ USR | ROZ UAR | ROZ ISR | ROZ SYR | ROZ UNO |
|-------------|------------|------|---------------|---------------|---------------|---------------|---------------|---------------|
| 8/4 | 530 | 235 | 45.91 | 29.10 | 30.00 | 29.02 | 30.00 | 38.13 |
| 8/11 | 621 | 140 | 17.14 | 28.65 | 28.83 | 28.33 | 30.00 | 30.06 |
| 8/18 | 553 | 170 | 35.54 | 27.72 | 29.56 | 35.97 | 30.01 | 30.93 |
| 8/25 | 568 | 178 | 31.98 | 28.28 | 30.00 | 30.33 | 30.00 | 37.28 |
| 9/1 | <u>444</u> | 319 | 38.51 | 45.48 | 30.46 | 32.80 | 30.01 | <u>148.33</u> |
| 9/8 | <u>497</u> | 289 | 50.19 | 28.95 | 29.51 | 29.68 | 30.00 | <u>54.31</u> |
| 9/15 | <u>457</u> | 288 | <u>75.73</u> | 28.60 | 31.65 | 30.60 | 38.70 | 48.72 |
| 9/22 | 501 | 241 | 49.47 | <u>57.59</u> | 29.67 | 29.15 | 29.87 | <u>61.12</u> |
| 9/29 | <u>473</u> | 294 | <u>73.00</u> | <u>51.78</u> | 29.62 | 29.72 | 30.83 | <u>78.70</u> |
| 10/6 | <u>482</u> | 284 | <u>96.99</u> | 41.02 | 29.55 | 41.39 | 30.32 | 40.31 |
| 10/13 | <u>329</u> | 509 | <u>86.88</u> | <u>68.02</u> | <u>85.23</u> | <u>269.47</u> | <u>111.81</u> | <u>53.37</u> |
| 10/20 | <u>361</u> | 404 | 65.52 | 47.01 | <u>73.84</u> | <u>235.62</u> | <u>78.73</u> | 29.65 |
| 10/27 | <u>366</u> | 433 | <u>88.58</u> | <u>71.53</u> | <u>124.79</u> | <u>147.44</u> | 45.55 | <u>68.05</u> |
| 11/3 | <u>459</u> | 302 | 63.66 | 32.36 | <u>73.78</u> | <u>71.27</u> | 39.87 | <u>84.55</u> |
| 11/10 | <u>491</u> | 263 | 41.80 | 42.72 | 40.29 | <u>50.18</u> | 34.20 | <u>58.91</u> |
| 11/17 | <u>478</u> | 249 | <u>70.97</u> | <u>53.39</u> | 33.63 | <u>103.63</u> | 30.01 | 41.98 |
| 11/24 | 521 | 195 | 41.10 | 29.69 | 29.69 | 46.42 | 31.22 | <u>62.49</u> |
| 12/1 | <u>474</u> | 291 | 36.74 | <u>52.56</u> | 47.69 | 35.64 | 30.00 | 40.45 |
| 12/8 | 522 | 294 | 51.58 | <u>53.52</u> | 44.51 | 34.86 | 38.82 | <u>53.85</u> |
| 12/15 | <u>491</u> | 345 | <u>99.99</u> | 40.48 | <u>85.31</u> | 43.09 | 38.53 | 30.02 |
| 12/22 | <u>451</u> | 406 | <u>105.08</u> | <u>148.86</u> | 48.31 | 48.73 | 46.24 | <u>51.26</u> |
| 12/29 | <u>470</u> | 283 | 31.00 | 29.34 | <u>73.82</u> | 43.16 | 35.13 | <u>70.49</u> |

Table 9

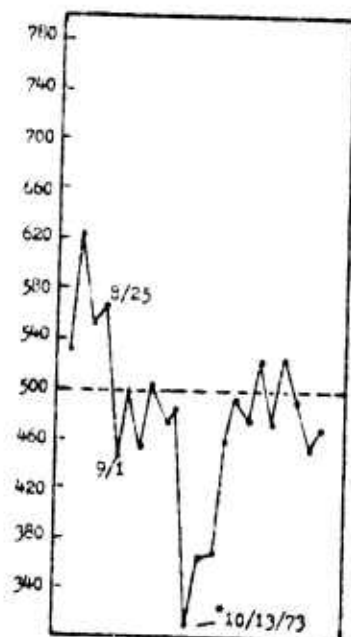
Two items for September 12 catch the eye: one reports a meeting of Hussain, Sadat, and Assad "aimed at the isolation of Jordan in the Arab world and reopening of the Arab eastern front against Israel." The other stated that a U.S. delegation was conferring with OECD officials to work out oil-sharing arrangements if the Arabs should cut oil supplies.

The action of the week ending September 22 is a miscellany composed mainly of continued reactions to the overthrow of the Allende government, events related to the opening of the 28th annual General Assembly of the United Nations, and, for no known reasons, reports on many Soviet policy statements. Virtually no attention was directed to the Middle East.

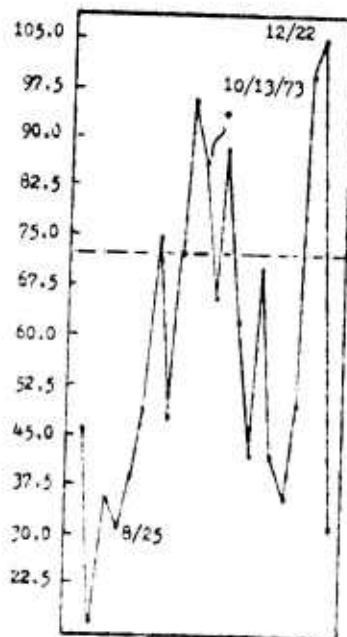
The week following showed a quite different pattern of attention. The focus of activity was the United Nations, Secretary Kissinger spoke there, emphasizing the dangers of the Middle East conflict and issuing the urgent call for a peace arrangement, Sadat criticized the Kissinger statement, calling it an "injection of anesthetics" to put the world to sleep and reiterating the Egyptian goal of freeing the occupied lands seized by Israel in 1967. Foreign Minister Gromyko also warned the UN of the danger in the Middle East and complained of "continued aggression" by Israel. At the end of the week a PLO seizure of hostages led Austria to close the transit facilities at Schonau for Soviet Jews going to Israel. This set off an uproar that, according to some, created a diversion and drew attention away from the Egyptian-Syrian preparations that opened the October war.

In summary, we see in the survey of the chronology only a mixed support for the argument that the EFI-ROZ monitor was already tracking in September the path of the event flow that led into the October war.

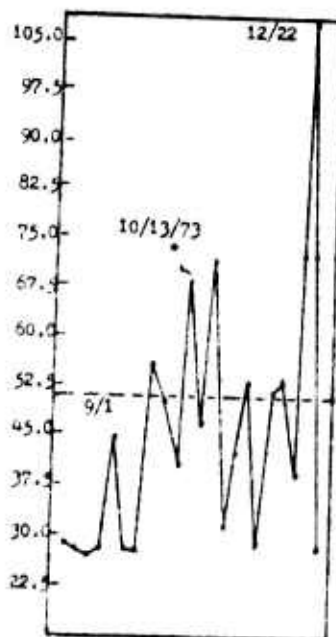
The evidence of Table 9, the data portrayed in the EFI plot appearing in Figure 21, and the ROZ charting in Figures 22 and 23 all emphasize the severe displacement of international relations brought about by the October crisis and the extreme tension that prevailed from September through December. It is as if the Middle East confrontation of 1973 marked the culmination of a whole international political experience. The question raised earlier reappears: did it also mark the end of an era?



EPI-3
OCTOBER WAR
FIG. 21



USA: ROZ
OCTOBER WAR



USSR: ROZ
OCTOBER WAR

FIG. 22

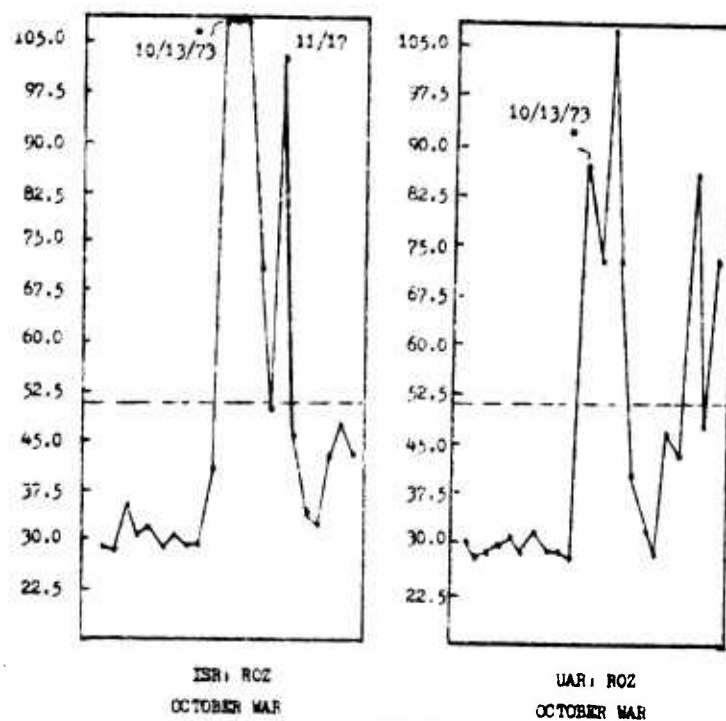


FIG. 23

RECOMMENDATIONS AND FURTHER TESTS

A tenth case might be offered, following that of the October war, in further demonstration of the ability of the EFI Index to locate high tension episodes in the event flow at large and of the power of the ROZ Indicator to identify the places where stress conditions prevail. The tenth case would be the Cyprus crisis of the summer of 1974. The dual indexing procedure works as well for this episode as for any of the previous ones. The EFI low of 499.0 for the week ending July 17, 1974 barely qualifies as an alerting sign but it is converged upon by a number of crisis-level ROZ readings:

73.40 for July 20 and 60.2 for July 27 for the British who had a deep involvement in this crisis, a series of 77.42, 236.94, 51.25, 49.03, 105.83, 46.30, 52.38, 37.28, and 50.57 for Greece during the period from July 20 through September 24, and a series of 114.15, 231.54, 231.08, 121.99, 181.10 and 89.90 for Turkey during the period of July 20 through August 24.

With only an occasional false indication, EFI-ROZ homes on targets of high tension with respect to time, place, involvement, and intensity. Many examples have been given

above of the capability of the approach to identify warning signs, often for periods of one to several weeks ahead of the climaxing events of crisis or violence. As has been made clear, it is the analysis of quantitative variations in the international event flow record that constitutes the methodology. It is urged that the present dual index technique be given close and serious attention and that some further improvement possibilities be studied by those responsible for current intelligence analyses of international political affairs. The end of the prototype development phase of such monitoring has been reached. We have come to a production stage where institutionalization and longterm investing are called for. It would be ideal, perhaps, if world tension and trouble monitoring were taken up, with major funding and sponsorship, by a private agency. The more realistic hope is, however, that government organizations of diplomacy and intelligence will adopt this methodology and expand it. Maximum public exposure of the data, techniques, and results used should be regarded not just as a measure of research cooperation with the academic community, but as a quality control safeguard.

In view of the recommendation just set forth as a consequence of ten years of constant study and analysis of the problem of monitoring, the next remark will appear, at first, to be extremely disconcerting: the EFI-R02 formulation may already be obsolescent. The international system possibly took a turn in a new direction in 1974. There is a chance, in other words, that the kinds of episodes that the monitoring system detects very well with only short "real time" lags will not develop in the future. It could be the ironical outcome that no sooner had a successful quantitative monitoring scheme been developed for the dangerous passages in international affairs, than the dangerous passages assumed new guises and different forms. One such indication will be found if the reader turns back to Figure 5 and notes there that there was a sudden collapse in the event flow early in 1974. Such a large shift, not experienced for many years, may be evidence that a significant sudden transformation in international behavior set in after the October war. It is conceivable that a basic system "reorganization" took place.

We have come back now to the theme stressed in the first pages of this report. Multiple signs point to the phenomenon of international system transformation; we are being urged from all sides to believe these signs and to adjust at least our attitudes to a readiness to embrace a new era of world affairs and changed relationships. Only a small voice of caution warns, however, that all this may not

be. There is an appeal in the notion of hedging bets. Decision-makers need all the help with options they can get from the permanent organizations and institutions of foreign and security affairs. We should be ready with theory, data, techniques, and analyses to go along with history, whichever way it turns. The extended discussion above of the EFI-ROZ applications to instances of tension in the ten year period from 1966 to 1976 is justified primarily on the grounds that it shows in concrete terms how both prospects and doubts about the future can be handled.

First, it should be apparent that a one-time effort to measure, test, and evaluate the character of the flow of international behavior is inappropriate. We are facing a "developmental construct:" if there is a new world of international affairs in transition and on its way to global interdependence, it will take some years of repeated observations and analyses to chart the details of relations of the new structure. On the other hand, if the most recent years and, possibly, the next few years, constitute a time of pause or a substantial phase of aberration in the performance of the international system, repeated observation and analysis of the EFI-ROZ type offer our best chance to measure the deviation and the recovery.

The second consideration stems from the first. The logical project of research, designed in an engineering framework, is, as was noted earlier, to follow two tracks.

We should do, over a period of time, what amounts to experimental testing. One track should proceed under a "plus le change..." assumption. In the background and supporting the approach is the whole argument about the tenacity, the resiliency, and the durability of the modern state system with its high politics practices always gravitating toward confrontation situations, no matter what the particular "agenda items" of an era may be.(24) We should assume, in brief, that no matter what the transforming forces are, the nations will be doing pretty much the same old business at the same old stand. EFI-ROZ monitoring, carried on patiently week by week, is the appropriate kind of methodology for following this first track.

The direction to be taken by the second track is indicated, obviously, by the "new threats from new quarters" orientation. We should assume that there are, indeed, new forces on the move. Opportunities and dangers in the future will be unlike those of the recent past. National security concerns, in particular, will not only require redefinition; they will have to be approached in an unfamiliar frame of

reference.(25) Both the conceptualization and the methodology of keeping the accounts of the stress and strain conditions for "state of the world" descriptions will have to be re-thought from the beginning. A different monitoring scheme, in tune with the transformation concept and capable of providing the readings of changing conditions and relations will be required. Different methods of indexing data with respect to movements toward and away from danger thresholds will need to be considered.

The initial surveying of this second track operation has been a principal task of the Threat Recognition and Analysis (TR&A) research. The effort now has reached an initial stage of completion. Both a conceptual foundation and a prototype monitoring methodology have been devised. A report follows this one to display, in a manner comparable to the foregoing EFl-ROZ survey, the first monitoring results emerging from trials of the "DDV" procedures and from the data in the "dangers files." Having identified the second track in general terms and having promised its full consideration elsewhere, the present discussion turns back now to the first track in order to investigate two related topics: why the EFl-ROZ scheme works as well as it does, and how improvements could be made in the procedures to attain still better anticipations.

There is a temptation at this point to set forth a full treatise on the world news--on the nature and the concept of "the news," on the historical connections between the practice of newsgathering and the interests of commerce and war, on the progressive institutionalization in the 19th and 20th centuries of an intricate, multi-staged process of selection all along the route from news sources to ultimate news consumers, on the symbiosis in the complicated relationships between the news organizations and the agencies of national governments, and on the special interdependence relations of contemporary communication research and the study and practice of international relations. Properly developed, such a treatise would advance to the argument that a massive mistake occurs when the specialized warning function of the world news is overlooked or misconceived and when the normal standards and goals of historical research are applied in the analysis of the news records as is done in international event studies.

One facet of this topic, concerning the contagious spread of the imagery of coming danger in the stream of overt verbal news reports has been treated elsewhere.(26) Another aspect must be introduced now, despite the lack of proper background and development, in explaining why the

EFI-ROZ methodology is effective.

Let us state first why we believe it is possible at all to do a quantitative tracing of the rise and fall of international tensions from the daily public reporting of events in a single source such as the NEW YORK TIMES or THE TIMES of London newspapers. The tracing is possible because these newspapers do NOT include all the news that's fit to print, because they DO have strong biases which, if corrected, might ruin their monitoring qualities, because their news stories select and include only a tiny fraction of all that happens, and because, primarily, they have attained an exceptional skill (exercised quite unconsciously as most stabilized institutional practices are), in ferreting out, with more art than science, where the origins of affairs lie--affairs that are about to rise to prominence. Neither knowing nor caring about the cybernetic principles they follow, some news organizations proficiently exploit the law of requisite variety and the technique of system redefinition. The great costs and trouble in mobilizing access to information on what is going on everywhere are absorbed in pursuit of what is most often idealized as "the building" of a "great," elite, cosmopolitan newspaper. In cybernetic perspective, this is but adherence to the law of requisite variety.(27) Replacing the "chaotic" and the "non-sensical" with something the interpreter DECIDES makes sense is the essence of system redefinition or recoding.(28) When the law and the principle are brought into working relationship, the result in the best of the news organizations is the apparently mad practice of throwing out almost all the information laboriously collected and paid for at high rates.

Sophia Peterson has begun to show, through careful research, how much does go into the discard in the daily preparation of a great newspaper. The lesson that is truly difficult to appreciate is the necessity of developing equal skill in the execution of three related processes: the acquisition of the largest, most searching, most accurate, and most varied body of data talent, time, and resources will permit, the systematic and purposeful sifting of "the facts" for purposes and objectives at hand, and the resolute and thoroughgoing practice of throwing away all but the very SMALLEST set of data required to support analysis. The editors and writers for a few newspapers in the world are very good at all three tasks. Some historians, particularly of the older "scientific historiography" school of thought pursued the ideal of tracking down every last "fact" connected with their narrow research topics so that the claim could be supported that everything had been seen: "vu

et lu" was a marginal notation sometimes used to check off a step toward "completeness." Then, these practitioners of the art of historical reconstruction would proceed, quite slyly and expertly, to throw away all but a tiny fraction of the materials collected; the small part of the data that could be incorporated in the narratives of a volume or two. The operations of choosing and discarding all took place "inside the head" of the individual historian and could not be inspected in detail by others.

Most of the government analysts and academic researchers who have been concerned with studies of current information flows have been duly impressed by the historian's example of striving for complete coverage in the data acquisition phase of the work but seem not to have grasped the ingenious habit of historical research in cheerfully throwing away most of the material. In government, the practice of accumulating large bodies of materials has occurred without sufficient provision for the proper evaluation and selection of useful data bases. Sometimes, potentially valuable information gets consigned to the shredder or the archives without anyone ever having used it or seen it.

Academic researchers also have operated under the influence of the historian's idea that the more facts accumulated around a topic the closer the knowledge comes to the reality of "how it was." It has been very difficult to grasp the fact, particularly in quantitative event data studies where everything is exposed to full view, that the largest collections of reports of events can represent no more than a miniscule portion of all the events that occurred. Adding more sources and increasing the size of data sets have seemed to be moves in the right direction. Indeed, the grip of the concept of "more data, more reality" has been so strong that some scholars have been urging the resort to "multiple sources" in every case of event data collecting.(29) This advice most certainly is wrong for some studies. For example, mixing together event data from three sources such as THE NEW YORK TIMES, THE TIMES of London, and the LOS ANGELES TIMES for monitoring warnings in the event flow as with EFL-ROZ, would be likely to produce a greatly desensitized warning indicator. One would expect the highs in one source to sometimes cancel the lows of another source, leaving a middling quantity or proportion. Generally, pattern effects created by the combinations of data sets would be likely to reduce the differentiation due to skills of selection developed in a particular news organization.

The indicated approach to improvement in monitoring and warning systems for the event flow of international and security affairs appears to lie mainly in the direction of expanding knowledge about the art and skill of selection. Progress could be made if the preoccupation with problems of data acquisition could be replaced with the preoccupation of the most systematic and effective procedures for getting rid of all but the essentials in data subjected to analysis. By concentrating on the methods of culling, investigators might come to appreciate that the demands on time and effort of data evaluation and selection are not less than the time and effort devoted to the acquiring of data. In effect, a recommendation is being set forth to engage in indexing. Indexing is, fundamentally, an exercise in discarding information.

Second, we need to examine comparatively the selection practices, built up over a long time and incorporated in the operational codes of the great news organizations, as employed in the presentation of the world news flow. For example, instead of worrying about the French bias of LE MONDE, we need to find out the classes of events that LE MONDE tends to retain and emphasize and that ASAHI SHIMBUN excludes and, therefore, neglects. An ordered body of comparative knowledge of international news selection practices would be useful in advancing the general study of international behavior. A third improvement would result if research within government organizations could be done and publicly reported, at least in part, on the extent to which data items arriving in the current intelligence stream and not appearing anywhere in the public news report either do or do not tend to improve the early warning performances of monitoring procedures such as EFI-ROZ.

EFI-ROZ monitoring takes place at the "systemic" level. The reason for that does not come from any particular devotion to one kind of approach as opposed to some other. The important consideration is that this level of analysis does not impose demands for detail that the public reporting of international event activity is unable to provide. A long-standing complaint against event data collection such as the WEIS NEW YORK TIMES file is that most of the actor-target cells of tabled data usually are empty (or, in other words, have zero values). Expectations about the wealth of detail to be found in almost 90,000 event descriptions are disappointed regularly. It has always seemed a shortcoming much to be regretted that the "game play" or the detailed sequence of action and response in international affairs on topics such as bargaining and negotiations cannot be followed well in the event files

based on public sources. For reasons mentioned earlier, the sources simply do not contain such sequential information in detail.

EFI-ROZ skirts that difficulty by moving in another direction and employing a concept of displacement. Advantage is taken of the fact that there is a total, fluctuating, weekly flow of reports of events that can be traced. This is the "regular" flow and it is varied through various minor and major deflections that are due to the local flurries of events. EFI-3 is but a tracing of deflections and is designed to register, with definition and strength, when main local flurries take place. There is an accord between the below-500 readings and the event flow displacements brought about by international confrontations and crises.

Similarly, the ROZ index takes advantage of the displacement idea to escape some of the liabilities of "thin data" and the too-numerous relational combinations of dyadic analyses. When an actor becomes embroiled in an affair with another actor and the relationship is tense, the level of "output" of each actor is raised so greatly that the difference amounts to a measurable distortion. Thus ROZ readings turn out to be very effective because the displacements of individual actor event flows take values that permit easy recognition of the locale and intensity of the "system disturbance."

An improvement in monitoring technique should result if a series of event studies were undertaken, employing data not available in public reports of international relations. This work would have to be done, in all likelihood, "in house" in government organizations responsible for current event flow analysis. Some "fingerprinting" of individual nation behavior patterns and style might come from analyses of the detail of the "game play" or action-response sequences at those times of displacement indicated by ROZ readings. Both directions of change should be interesting and worthwhile to investigate: the transition from the day-to-day "normal" flow characteristics into the crisis-level displacement and the transition from the crisis-level state of affairs back to the "normal" action-response sequences.

Finally, there is a half-way possibility of EFI-ROZ refinement and improvement bridging between the two tracks of monitoring effort. One might argue that it should not be necessary to assume either the demise of an old order of international relationships or the birth of a new order. A reasonable view would be that some changes have occurred in

the structure and process characteristics of the international system but that these do not have the proportions of a major transformation or reorganization. Only a modification of the old monitoring scheme might be required. Thus, a useful experiment would be to "start" EFl-ROZ from a later beginning date: instead of 1966, the origin might be set at 1971. Then the calculation of the reference points of behavior and patterning could be redone and the extent of "new era" influences might be gauged through comparative studies of the two sets of monitoring values, one in the old format and the other in the modified version.

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EFI-3 WEEKLY READINGS

1966-1976

| WEEK ENDING | EFI# | WEEK ENDING | EFI# | WEEK ENDING | EFI# | WEEK ENDING | EFI# |
|----------------|-------|----------------|-------|-------------------|--------------|-------------------|------------------|
| 660108 | 618.5 | 660806 | 578.3 | 670304 | 607.7 | 670930 | 609.3 |
| 660115 | 708.8 | 660813 | 562.1 | 670311 | 707.6 | 671007 | 559.3 |
| 660122 | 626.6 | 660820 | 624.3 | 670318 | 696.5 | 671014 | 567.0 |
| 660129 | 667.7 | 660827 | 627.1 | 670325 | 642.6 | 671021 | 583.2 |
| 660205 | 577.9 | 660903 | 623.9 | 670401 | 701.9 | 671028 | 595.4 |
| 660212 | 598.9 | 660910 | 645.6 | 670408 | 583.0 | 671104 | 659.0 |
| 660219 | 655.2 | 660917 | 670.7 | 670415 | 578.9 | 671111 | 626.6 |
| 660226 | 654.3 | 660924 | 608.5 | 670422 | 554.9 | 671118 | 626.6 |
| 660305 | 621.7 | 661001 | 582.5 | 670429 | 668.9 | 671125 | 565.7 |
| 660312 | 649.0 | 661008 | 691.6 | 670506 | 616.8 | 671202 | 591.5 |
| 660319 | 635.5 | 661015 | 595.0 | 670513 | 678.6 | 671209 | 675.0 |
| 660326 | 714.9 | 661022 | 607.0 | 670520 | 573.4 | 671216 | 606.1 |
| 660402 | 591.2 | 661029 | 587.6 | 670527 | 539.5 | 671223 | 657.7 |
| 660409 | 707.9 | 661105 | 565.7 | 670603 | 524.7 | 671230 | 721.7 |
| 660416 | 669.3 | 661112 | 757.7 | 670610 | <u>478.8</u> | 680106 | 501.7 |
| 660423 | 690.6 | 661119 | 638.8 | 670617 | 538.1 | 680113 | 552.0 |
| 660430 | 610.5 | 661126 | 603.5 | 670624 | 587.7 | 680120 | 602.2 |
| 660507 | 598.6 | 661203 | 587.9 | 670701 | 529.2 | 680127 | 553.0 |
| 660514 | 551.9 | 661210 | 643.1 | 670708 | 533.4 | 680203 | 583.3 |
| 660521 | 631.8 | 661217 | 601.5 | 670715 | 588.5 | 680210 | 569.1 |
| 660528 | 567.6 | 661224 | 620.8 | 670722 | 608.4 | 680217 | 596.0 |
| 660604 | 654.0 | 661231 | 600.2 | 670729 | 620.7 | 680224 | 579.2 |
| 660611 | 642.2 | 670107 | 534.4 | 670805 | 637.2 | 680302 | 565.2 |
| 660618 | 599.9 | 670114 | 629.1 | 670812 | 659.6 | 680309 | 555.0 |
| 660625 | 632.6 | 670121 | 683.9 | 670819 | 612.8 | 680316 | 568.4 |
| 660702 | 586.5 | 670128 | 632.4 | 670826 | 591.2 | 680323 | 610.6 |
| 660709 | 669.0 | 670204 | 697.8 | 670902 | 675.3 | 680330 | 604.3 |
| 660716 | 646.9 | 670211 | 615.6 | 670909 | 671.8 | 680406 | 516.2 |
| 660723 | 703.3 | 670218 | 580.5 | 670916 | 741.0 | 680413 | 549.8 |
| 660730 | 725.7 | 670225 | 622.1 | 670923 | 670.6 | 680420 | 546.5 |

EFI-3 WEEKLY READINGS -2-
1966-1976

| WEEK ENDING | EFI# | WEEK ENDING | EFI# | WEEK ENDING | EFI# | WEEK ENDING | EFI# |
|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|
| 680427 | 529.4 | 681123 | 650.4 | 690621 | 538.2 | 700117 | 574.6 |
| 680504 | 598.0 | 681130 | 609.5 | 690628 | 540.5 | 700124 | 555.5 |
| 680511 | 537.4 | 681207 | 572.1 | 690705 | 542.1 | 700131 | 535.1 |
| 680518 | 541.5 | 681214 | 605.7 | 690712 | 509.0 | 700207 | 515.1 |
| 680525 | 578.5 | 681221 | 603.3 | 690719 | 553.8 | 700214 | <u>464.9</u> |
| 680601 | 602.3 | 681228 | 564.9 | 690726 | 530.5 | 700221 | <u>495.8</u> |
| 680608 | 580.2 | 690104 | 520.8 | 690802 | 592.3 | 700228 | <u>482.8</u> |
| 680615 | 516.4 | 690111 | 575.2 | 690809 | 581.0 | 700307 | 536.4 |
| 680622 | 598.3 | 690118 | 615.2 | 690816 | 563.1 | 700314 | 539.3 |
| 680629 | 589.5 | 690125 | 577.0 | 690823 | 586.1 | 700321 | 527.2 |
| 680706 | 601.2 | 690201 | 521.5 | 690830 | 532.8 | 700328 | 569.8 |
| 680713 | 519.9 | 690208 | 507.8 | 690906 | <u>499.7</u> | 700404 | 517.8 |
| 680720 | 554.1 | 690215 | 522.7 | 690913 | 510.2 | 700411 | 581.2 |
| 680727 | 523.5 | 690222 | 566.7 | 690920 | 503.6 | 700418 | <u>473.4</u> |
| 680803 | 600.5 | 690301 | <u>487.4</u> | 690927 | <u>495.1</u> | 700425 | <u>453.9</u> |
| 680810 | 644.1 | 690308 | 611.7 | 691004 | 533.0 | 70502 | 503.4 |
| 680817 | 591.1 | 690315 | 510.7 | 691011 | 574.9 | 700509 | 557.5 |
| 680824 | <u>476.6</u> | 690322 | 526.1 | 691018 | 530.6 | 700516 | 590.0 |
| 680831 | <u>496.6</u> | 690329 | 511.9 | 691025 | 509.9 | 700523 | 586.7 |
| 680907 | 570.7 | 690405 | 555.3 | 691101 | <u>493.6</u> | 700530 | 597.0 |
| 680914 | 590.8 | 690412 | <u>454.6</u> | 691108 | 535.0 | 700606 | 512.6 |
| 680921 | 567.2 | 690419 | 507.8 | 691115 | 572.3 | 700613 | <u>499.9</u> |
| 680928 | 605.5 | 690426 | 525.8 | 691122 | 570.5 | 700620 | 633.2 |
| 681005 | 573.5 | 690503 | <u>492.9</u> | 691129 | 558.1 | 700627 | 500.9 |
| 681012 | 570.5 | 690510 | 554.6 | 691206 | 527.9 | 700704 | 508.4 |
| 681019 | 558.3 | 690517 | <u>481.7</u> | 691213 | 556.3 | 700711 | 507.9 |
| 681026 | 617.9 | 690524 | 517.6 | 691220 | 573.4 | 700718 | 554.3 |
| 681102 | 619.3 | 690531 | 516.6 | 691227 | 571.4 | 700725 | 570.3 |
| 681109 | 593.5 | 690607 | 610.7 | 700103 | 644.5 | 700801 | <u>481.9</u> |
| 681116 | 593.6 | 690614 | 534.9 | 700110 | 556.5 | 700808 | 525.5 |

EFI-3 WEEKLY READINGS -3-
1966-1976

| WEEK ENDING | EFI# | WEEK ENDING | EFI# | WEEK ENDING | EFI# | WEEK ENDING | EFI# |
|----------------|--------------|----------------|------------------|----------------|--------------|----------------|--------------|
| 700815 | 529.3 | 710327 | 501.0 | 711106 | 596.9 | 720617 | 577.3 |
| 700822 | 560.4 | 710403 | <u>496.5</u> | 711113 | 576.2 | 720624 | 582.9 |
| 700829 | 540.6 | 710410 | 532.3 | 711120 | 604.5 | 720701 | 577.7 |
| 700905 | 549.9 | 710417 | <u>483.3</u> | 711127 | 502.0 | 720708 | 564.0 |
| 700912 | <u>468.8</u> | 710424 | 525.1 | 711204 | <u>458.7</u> | 720715 | 581.0 |
| 700919 | <u>448.0</u> | 710501 | 504.2 | 711211 | <u>377.3</u> | 720722 | 626.5 |
| 700926 | <u>457.7</u> | 710508 | 539.7 | 711218 | <u>438.4</u> | 720729 | 656.8 |
| 701003 | 524.1 | 710515 | 558.1 | 711225 | 516.3 | 720805 | 648.9 |
| 701010 | 522.9 | 710522 | 571.9 | 720101 | 574.6 | 720812 | 639.8 |
| 701017 | <u>488.5</u> | 710529 | 629.0 | 720108 | 599.4 | 720819 | 677.2 |
| 701024 | 532.4 | 710605 | 558.1 | 720115 | 570.5 | 720826 | 612.0 |
| 701031 | 532.6 | 710612 | 642.2 | 720122 | 607.5 | 720902 | 642.7 |
| 701107 | 546.9 | 710619 | 590.2 | 720129 | 587.9 | 720909 | 563.8 |
| 701114 | 649.8 | 710626 | 672.7 | 720205 | 560.7 | 720916 | 595.8 |
| 701121 | 547.3 | 710703 | 705.9 | 720212 | 588.7 | 720923 | 518.3 |
| 701128 | 557.4 | 710710 | 610.9 | 720219 | 550.6 | 720930 | <u>467.7</u> |
| 701205 | 509.9 | 710717 | 694.5 | 720226 | <u>544.3</u> | 721007 | 559.6 |
| 701212 | 539.0 | 710724 | 574.8 | 720304 | 536.6 | 721014 | 635.9 |
| 701219 | 602.8 | 710731 | 651.9 | 720311 | 613.6 | 721021 | 565.1 |
| 701226 | 625.4 | 710807 | 579.1 | 720318 | 567.6 | 721028 | 500.7 |
| 710102 | 574.4 | 710814 | 504.2 | 720325 | 604.1 | 721104 | <u>484.6</u> |
| 710109 | 536.6 | 710821 | 623.3 | 720401 | 569.2 | 721111 | 541.2 |
| 710116 | <u>544.1</u> | 710828 | 620.8 | 720408 | 599.5 | 721118 | <u>457.9</u> |
| 710123 | 559.5 | 710904 | 507.8 | 720415 | 637.9 | 721125 | 507.8 |
| 710130 | 517.3 | 710911 | 578.7 | 720422 | 566.4 | 721202 | 563.3 |
| 710206 | <u>472.5</u> | 710918 | 620.3 | 720429 | 618.4 | 721209 | 531.0 |
| 710213 | <u>447.8</u> | 710925 | 651.6 | 720506 | 665.2 | 721216 | 573.6 |
| 710220 | <u>495.6</u> | 711002 | 593.9 | 720513 | 574.4 | 721223 | <u>476.7</u> |
| 710227 | <u>449.3</u> | 711009 | 674.7 | 720520 | 666.7 | 721230 | <u>490.0</u> |
| 710306 | 540.2 | 711016 | 584.3 | 720527 | 661.6 | 730106 | 511.2 |
| 710313 | <u>442.6</u> | 711023 | 648.2 | 720603 | 608.7 | 730113 | <u>496.9</u> |
| 710320 | 502.1 | 711030 | <u>544.5</u> | 720610 | 554.7 | 730120 | 520.6 |

EFI-3 WEEKLY READINGS -4-
1966-1976

| WEEK ENDING | EFI# | WEEK ENDING | EFI# | WEEK ENDING | EFI# | WEEK ENDING | EFI# |
|----------------|--------------|----------------|--------------|----------------|--------------|----------------|-------|
| 730127 | <u>496.9</u> | 730901 | <u>444.2</u> | 740406 | 646.2 | 741109 | 569.0 |
| 730203 | <u>498.6</u> | 730908 | <u>497.5</u> | 740413 | 564.7 | 741116 | 647.9 |
| 730210 | <u>478.2</u> | 730915 | <u>457.4</u> | 740420 | 548.2 | 741123 | 635.5 |
| 730217 | <u>438.5</u> | 730922 | 501.5 | 740427 | 654.3 | 741130 | 662.0 |
| 730224 | <u>472.4</u> | 730929 | <u>473.3</u> | 740504 | 588.7 | 741207 | 602.0 |
| 730303 | <u>456.2</u> | 731006 | <u>482.6</u> | 740511 | 637.9 | 741214 | 648.3 |
| 730310 | 578.4 | 731013 | <u>329.4</u> | 740518 | 581.4 | 741221 | 594.1 |
| 730317 | 541.1 | 731020 | <u>361.3</u> | 740525 | 566.8 | 741228 | 777.3 |
| 730324 | <u>483.2</u> | 731027 | <u>366.2</u> | 740601 | 643.1 | 750104 | 739.0 |
| 730331 | 517.7 | 731103 | <u>459.4</u> | 740608 | 621.0 | 750111 | 659.2 |
| 730407 | 502.6 | 731110 | <u>491.2</u> | 740615 | 616.5 | 750118 | 628.9 |
| 730414 | 559.2 | 731117 | <u>478.5</u> | 740622 | 637.2 | 750125 | 667.2 |
| 730421 | 548.4 | 731124 | 521.4 | 740629 | 604.8 | 750201 | 731.0 |
| 730428 | 556.9 | 731201 | <u>474.6</u> | 740706 | 695.4 | 750208 | 602.6 |
| 730505 | 533.8 | 731208 | 522.4 | 740713 | 593.1 | 750215 | 675.0 |
| 730512 | 520.1 | 731215 | <u>491.5</u> | 740720 | 517.1 | 750222 | 732.8 |
| 730519 | <u>487.1</u> | 731222 | <u>451.2</u> | 740727 | <u>499.0</u> | 750301 | 666.4 |
| 730526 | 551.1 | 731229 | <u>470.1</u> | 740803 | 550.1 | 750308 | 675.4 |
| 730602 | 521.4 | 740105 | 503.0 | 740810 | 569.0 | 750315 | 641.6 |
| 730609 | 534.4 | 740112 | <u>477.4</u> | 740817 | 540.3 | 750322 | 609.5 |
| 730616 | 542.2 | 740119 | 520.5 | 740824 | 655.1 | 750329 | 563.2 |
| 730623 | 562.4 | 740126 | <u>461.5</u> | 740831 | 705.2 | 750405 | 594.5 |
| 730630 | 578.5 | 740202 | 512.2 | 740907 | 691.4 | 750412 | 711.7 |
| 730707 | 547.6 | 740209 | 530.4 | 740914 | 640.4 | 750419 | 667.1 |
| 730714 | 587.7 | 740216 | <u>488.5</u> | 740921 | 587.4 | 750426 | 687.9 |
| 730721 | 544.1 | 740223 | 525.8 | 740928 | 556.4 | 750503 | 619.1 |
| 730728 | 556.8 | 740302 | 555.6 | 741005 | 598.2 | 750510 | 622.5 |
| 730804 | 530.7 | 740309 | 638.9 | 741012 | 656.9 | 750517 | 663.8 |
| 730811 | 621.1 | 740316 | 630.0 | 741019 | 710.9 | 750524 | 543.0 |
| 730818 | 553.7 | 740323 | 619.8 | 741026 | 681.5 | 750531 | 662.9 |
| 730825 | 568.9 | 740330 | 541.4 | 741102 | 638.8 | 750607 | 647.6 |

EFI-3 WEEKLY READINGS -5-

1966-1976

| WEEK ENDING | EFI# | WEEK ENDING | EFI# |
|----------------|--------------|----------------|--------------|
| 750614 | 673.3 | 760103 | 760.0 |
| 750621 | 802.6 | 760110 | 531.3 |
| 750628 | 673.1 | 760117 | <u>446.1</u> |
| 750705 | 700.6 | 760124 | 536.5 |
| 750712 | 663.1 | 760131 | 545.5 |
| 750719 | 748.9 | 760207 | 662.7 |
| 750726 | 608.2 | 760214 | 582.6 |
| 750802 | 728.4 | 760221 | 553.0 |
| 750809 | 660.8 | 760228 | 635.8 |
| 750816 | 702.3 | 760306 | 627.9 |
| 750823 | 693.9 | 760313 | 614.5 |
| 750830 | 638.0 | 760320 | 568.3 |
| 750906 | 583.7 | 760327 | 562.3 |
| 750913 | 635.3 | 760403 | 578.4 |
| 750920 | 536.2 | 760410 | 624.6 |
| 750927 | 546.3 | 760417 | 627.0 |
| 751004 | 536.3 | 760424 | 657.7 |
| 751011 | 636.4 | 760501 | 520.8 |
| 751018 | 727.6 | 760508 | 598.4 |
| 751025 | 672.0 | 760515 | 587.4 |
| 751101 | 641.8 | 760522 | 519.3 |
| 751108 | 621.4 | 760529 | 560.0 |
| 751115 | 554.0 | 760605 | 529.8 |
| 751122 | 670.0 | | |
| 751129 | 529.1 | | |
| 751206 | <u>496.4</u> | | |
| 751213 | 568.8 | | |
| 751220 | 579.3 | | |
| 751227 | 616.6 | | |

THE "TOP 19;" INTERNATIONAL ACTORS INITIATING 1% OR MORE OF
THE REPORTED EVENTS

The ten year WEIS file for THE NEW YORK TIMES covers the period
January 1, 1966 through December 31, 1975. It contains 78,956 event
reports.

The following displays the "top 19" international actors in rank order
and shows the numbers of events initiated and percent of the whole:

| | | | |
|-------|----------|-------|---------|
| 1 | USA(002) | 15133 | 19.2 |
| 2 | USR(365) | 5482 | 6.9 |
| 3 | VTN(816) | 5262 | 6.7 |
| 4 | ISR(666) | 4465 | 5.7 |
| 5 | VTS(817) | 3254 | 4.1 |
| 6 | UNO(399) | 3128 | 4.0 |
| 7 | UAR(651) | 3017 | 3.8 |
| 8 | CHN(710) | 2225 | 2.8 |
| 9 | UNK(200) | 1961 | 2.5 |
| 10 | FRN(220) | 1683 | 2.1 |
| 11 | GMW(255) | 1624 | 2.1 |
| 12 | CAM(811) | 1545 | 2.0 |
| 13 | VCG(818) | 1368 | 1.7 |
| 14 | PLO(697) | 1187 | 1.5 |
| 15 | IND(750) | 1126 | 1.4 |
| 16 | JOR(663) | 1116 | 1.4 |
| 17 | JAP(740) | 1102 | 1.4 |
| 18 | SYR(652) | 1025 | 1.3 |
| 19 | PAK(770) | 826 | 1.0 |
| TOTAL | | 56529 | %71.595 |

USA The United States
USR The Soviet Union
VTN North Vietnam
ISR Israel
VTS South Vietnam
UNO The United Nations
UAR The United Arab Republic
CHN China
UNK The United Kingdom
FRN France

GMW West Germany
CAM Cambodia
VCG The Vietcong
PLO Palestine Liberation Org
IND India
JOR Jordan
JAP Japan
SYR Syria
PAK Pakistan

APPENDIX II

THE "NEXT 22:" INTERNATIONAL ACTORS INITIATING LESS THAN 1% OF
THE REPORTED INTERNATIONAL EVENTS BUT MORE THAN .4%

The ten year WEIS file for THE NEW YORK TIMES covers the period
January 1, 1966 through December 31, 1975. It contains 78,956 event
reports.

The following displays the data for 22 international actors in
rank order. Total numbers of acts and percent of the whole are
shown. These are the "second order" actors:

| | | | |
|----|----------|-------|---------|
| 1 | CAN(020) | 725 | .9 |
| 2 | LAO(812) | 812 | .8 |
| 3 | GME(265) | 609 | .8 |
| 4 | KOS(732) | 552 | .7 |
| 5 | LEB(660) | 548 | .7 |
| 6 | VAT(328) | 500 | .6 |
| 7 | EEC(397) | 468 | .6 |
| 8 | CZE(315) | 467 | .6 |
| 9 | YUG(345) | 442 | .6 |
| 10 | TUR(640) | 441 | .6 |
| 11 | SAU(670) | 438 | .6 |
| 12 | TAI(800) | 423 | .5 |
| 13 | IRQ(645) | 421 | .5 |
| 14 | CUB(040) | 408 | .5 |
| 15 | ITA(325) | 404 | .5 |
| 16 | KON(731) | 398 | .5 |
| 17 | GRC(350) | 397 | .5 |
| 18 | AUL(900) | 393 | .5 |
| 19 | IRN(630) | 383 | .5 |
| 20 | LBY(620) | 379 | .5 |
| 21 | RUM(360) | 372 | .5 |
| 22 | POL(290) | 366 | .5 |
| | TOTAL | 10157 | %12.864 |

CAN Canada
LAO Laos
GME East Germany
KOS South Korea
LEB Lebanon
VAT The Vatican
EEC The European Community
CZE Czechoslovakia
YUG Yugoslavia
SAU Saudi Arabia
TUR Turkey

TAI Thailand
IRQ Iraq
CUB Cuba
ITA Italy
KON North Korean
GRC Greece
AUL Australia
IRN Iran
LBY Libya
RUM Rumania
POL Poland

THE "BOTTOM 40;" INTERNATIONAL ACTORS INITIATING LESS THAN .5% OF THE REPORTED INTERNATIONAL EVENTS BUT AN AVERAGE OF AT LEAST ONE A MONTH (120 IN THE 10 YEAR PERIOD)

The ten year WEIS file for THE NEW YORK TIMES covers the period January 1, 1966 through December 31, 1975. It contains 78,956 event reports.

The following displays the data for 40 international actors in not-rank order. Total numbers of acts and percent of the whole are shown.

| | | |
|----------|-----|----|
| MEX(070) | 179 | .2 |
| VEN(101) | 141 | .2 |
| PER(135) | 137 | .2 |
| BRA(140) | 175 | .2 |
| CHL(155) | 311 | .4 |
| ARG(160) | 155 | .2 |
| IRE(205) | 176 | .2 |
| NTH(210) | 197 | .2 |
| BEL(211) | 194 | .2 |
| SWZ(225) | 128 | .2 |
| SPN(230) | 276 | .3 |
| POR(235) | 283 | .4 |
| AUS(305) | 133 | .2 |
| HUN(310) | 149 | .2 |
| CYP(352) | 235 | .3 |
| SWD(380) | 222 | .3 |
| DEN(390) | 120 | .2 |
| NAT(396) | 241 | .3 |
| NIG(475) | 323 | .4 |
| COP(490) | 153 | .2 |
| UGA(500) | 247 | .3 |
| TAZ(510) | 136 | .2 |
| ZAM(551) | 209 | .3 |
| RHO(552) | 162 | .2 |
| SAF(560) | 201 | .3 |
| OAU(599) | 128 | .2 |
| MOR(600) | 158 | .2 |
| ALG(615) | 344 | .4 |
| TUN(616) | 121 | .2 |
| SUD(625) | 176 | .2 |
| KUW(690) | 173 | .2 |
| ARL(699) | 131 | .2 |
| CHT(713) | 215 | .3 |
| EGD(765) | 139 | .2 |
| LAF(813) | 241 | .3 |
| MAL(820) | 155 | .2 |
| PHI(840) | 314 | .4 |
| INS(850) | 309 | .4 |
| NEW(920) | 141 | .2 |

THE DISTRIBUTIONS OF INTERNATIONAL EVENTS AS INITIATED BY 183
INTERNATIONAL ENTITIES AND ACTORS AS FOUND IN THE WEIS FILE FOR
THE NEW YORK TIMES IN THE TEN YEAR PERIOD January 1, 1966-
December 31, 1975.

The United States was the source of 15,133 reported events. This is 19.2% of the total event flow (78,956 reported events).

The "top 19" actors (including the USA) committed 56,529 reported acts or 71.595% of the total event flow.

The "next 22" actors committed 10,157 acts or 12.864% of the total flow of events.

The "bottom 40" initiated 7,803 reported events or 9.882% of the total.

The "upper 41" thus did 84.4% of the action

The "lower 40" thus did 9.9% of the action

The "100 non-actors" did 3,010 reported acts or 3.8% of the total.

A little less than 2% of the acts fall in the "group" category of 998 and are not counted in the above totals. There were 1,317 of these reported.